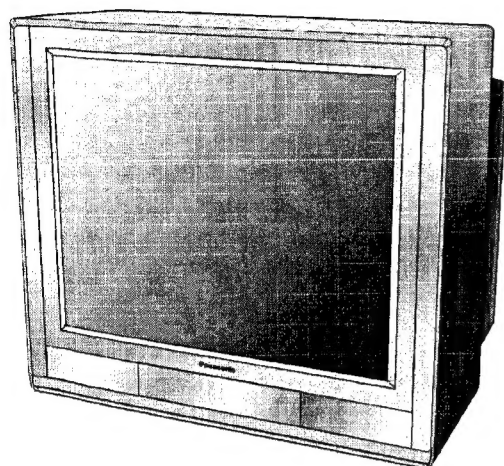


# Service Manual

Colour Television



## TC-29P80R

MX-10 Chassis

### Specification

Power Source	AC Auto 110-240 V, 50/60 Hz	Video	31.5 MHz (D,K) / 32.5 MHz (B,G)
Power Consumption	158 W		32.0 MHz (I) / 32.5 MHz (M)
	Standby condition : 0.8 W	Sound	33.57 MHz (PAL) /
Aerial Terminal	Impedance : 75Ω, Coaxial type	Colour	33.6 MHz (SECAM)
Tuning System	<b>Frequency Synthesizer</b>		34.42 MHz (NTSC) /
	Auto Search Tuning		33.75 MHz (SECAM)
	Pos : 100 Positions	Receiving Stereo Sound System	QUADRA STEREO / TEXT
Receiving System	17 Systems	Video/Audio/Terminals	IN S-Video Y:1.0Vp-p 75Ω
Receiving Channels	Regular TV	AV 1, 2, 3	DVD IN S-Video C:0.3Vp-p 75Ω
VHF BAND	2-12 (PAL/SECAM B, K1)	Y / P <sub>B</sub> / P <sub>R</sub>	(Phone type) Y:1.0Vp-p 75Ω P <sub>B</sub> ,
	0-12 (PAL B AUST.)		PR:0.7Vp-p 75Ω Video 1.0Vp-p
	1-9 (PAL B N.Z.)		75Ω Audio Approx. 400mV 47kΩ
	1-12 (PAL/SECAM D)		Video 1.0Vp-p 75Ω
	1-12 (NTSC M Japan)	Monitor Out	Audio Approx. 400mV 47kΩ
	2-13 (NTSC M U.S.A.)	High Voltage	31.0 (+0.7, -1.5kV) at zero beam current
UHF BAND	21-69 (PAL G,H,I/SECAM G,K,K1)	Picture Tube	M68LQK186XH Type 29 (68 cm)
	28-69 (PAL B AUST.)		Measured diagonally, 10° deflection
	13-57 (PAL D,K)	Audio Output	16 W speaker
	13-62 (NTSC M Japan)	Dimensions (W x D x H)	699 mm x 509 mm x 584 mm
	14-69 (NTSC M U.S.A.)	Weight (Mass)	49 kg (Net)
CATV	S1-S20 (OSCAR)	Accessories Supplied	Remote Control Transmitter
	1-125 (U.S.A. CATV)		1. R6(AA) Battery x2
	C13-C49 (JAPAN)		
	S21-S41 (HYPER)		
	Z1-Z37 (CHINA)		
Intermediate Frequency	38.0 MHz	Note:	

Specifications are subject to change without notice. Mass and Dimensions shown are approximate.

# Panasonic®

© 2002 Matsushita Electric Industrial Co., Ltd. All rights reserved. Unauthorized copying and distribution is a violation of law.

**⚠ WARNING**

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

**CONTENTS**

	Page		Page
<b>1 Safety Precautions</b> .....	<b>3</b>	5.8. COLOUR PURITY .....	10
1.1. General Guide .....	3	5.9. CONVERGENCE .....	10
1.2. Leakage Current Cold Check .....	3	5.10. WHITE BALANCE (MARKET MODE CHK 3) .....	11
1.3. Leakage Current Hot Check (See Fig. 1) .....	3	<b>6 Memo</b> .....	<b>12</b>
1.4. X-Radiation .....	3	<b>7 CONDUCTOR VIEWS</b> .....	<b>13</b>
<b>2 Location of Controls and Circuit Boards</b> .....	<b>4</b>	7.1. A-Board (TNP4G164AH SINGAPORE ONLY)	
2.1. REAR VIEW .....	4	(TNP4G164AK MIDDLE EAST ONLY) .....	13
2.2. LOCATION AND FUNCTION NAME OF CIRCUIT BOARD		<b>8 SCHEMATIC DIAGRAMS</b> .....	<b>15</b>
.....	4	8.1. SCHEMATIC DIAGRAM FOR MODEL TC-29P80R (MX-	
<b>3 Service Hints</b> .....	<b>5</b>	10A CHASSIS) .....	15
3.1. HOW TO MOVE CHASSIS INTO SERVICE POSITION. ..	5	8.2. Main Board (TNP4G164AH/AK) .....	17
<b>4 MARKET MODE FUNCTION</b> .....	<b>6</b>	8.3. Rear AV Circuit (TNP4G173AC) .....	19
<b>5 ADJUSTMENT PROCEDURE</b> .....	<b>8</b>	8.4. CRT Circuit (TNP4G107AV) .....	21
5.1. B VOLTAGE .....	8	8.5. Pincushion Circuit (TNP4G108BB) .....	22
5.2. RF AGC .....	8	8.6. Geomagnetic Circuit (TNP4G118AN) .....	23
5.3. HIGH VOLTAGE .....	8	<b>9 PARTS LOCATION</b> .....	<b>25</b>
5.4. SUB TINT .....	8	<b>10 Replacement Parts List</b> .....	<b>27</b>
5.5. SUB CONTRAST .....	8	10.1. Replacement Parts List Notes .....	27
5.6. PAL COLOUR OUTPUT .....	9	10.2. Replacement Parts List .....	28
5.7. NTSC COLOUR OUTPUT .....	9		

# 1 Safety Precautions

## 1.1. General Guide

1. It is advisable to insert an isolation transformer in the AC supply before servicing a hot chassis. Fig. 1.

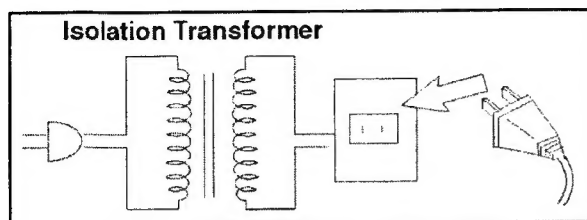


Fig. 1

2. When servicing, observe the original lead dress, especially the lead dress in the high voltage circuits. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
3. After servicing, observe that all the protective devices such as insulation barriers, insulation papers, shields, and isolation R-C combinations, are properly installed.
4. When the receiver is not to be used for a long period of time, unplug the power cord from the AC outlet.
5. Potential, as high as **31.7 kV** is present when this receiver is in operation. Operation of the receiver without the receiver power supply. Servicing should not be attempted by anyone who is not thoroughly familiar with the precautions necessary when working on high voltage equipment. Always discharge the anode of the picture tube to the receiver chassis before handling the tube.

After servicing make the following leakage current checks to prevent the customer from being exposed to shock hazards.

## 1.2. Leakage Current Cold Check

1. Unplug the AC cord and connect a jumper between the two prongs on the plug. Fig. 2.

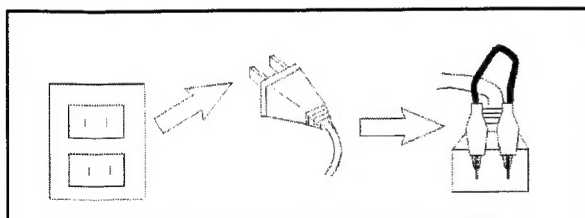


Fig. 2

2. Turn on the receiver's power switch.
3. Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the receiver, such as screw heads, aerials, connectors, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be between **4 MΩ and 20 MΩ**. When the exposed metal does not have a return path to the chassis, the reading must be zero.

## 1.3. Leakage Current Hot Check (See Fig. 1)

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a **2 kΩ, 10 W** resistor in series with an exposed metallic part on the receiver and an earth such as a water pipe.
3. Use an AC voltmeter, with high impedance type, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point. Fig. 3.

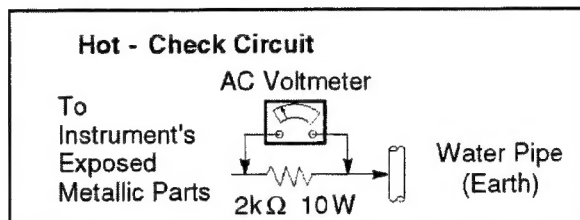


Fig. 3

5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.
6. The potential any point should not exceed **1.0 V rms**. In the case of a measurement being outside of the limits specified, there is a possibility of a shock hazard, and the receiver should be repaired and re-checked before it is returned to the customer. Fig. 4.

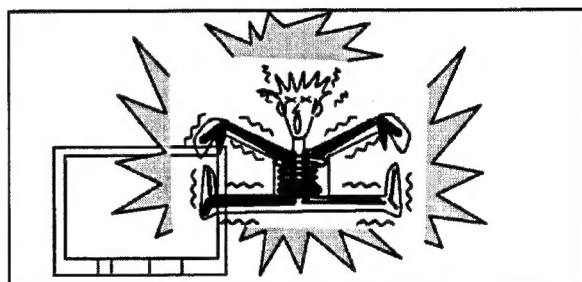


Fig. 4

## 1.4. X-Radiation

### Warning :

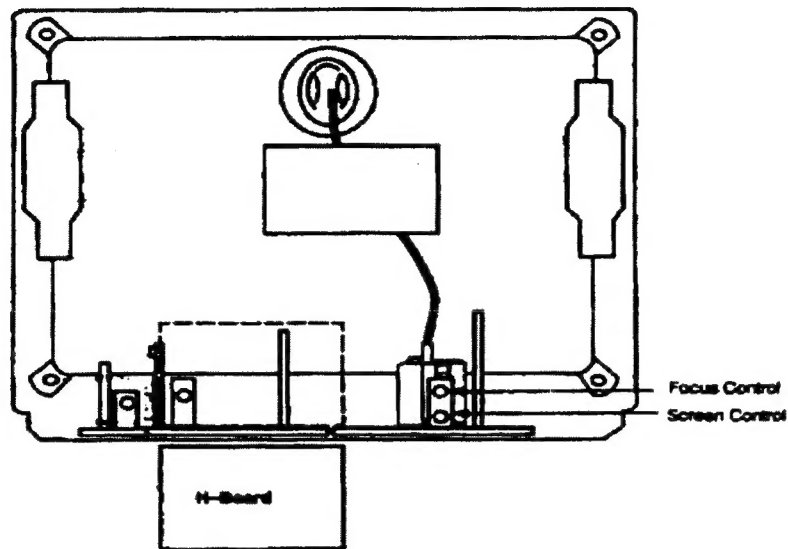
1. The potential sources of X-Radiation in TV sets are the EHT section and the picture tube.
2. When using a picture tube test rig for service, ensure that the rig is capable of handling **29.5 kV** without causing X-Radiation.

**Note:** It is important to use an accurate periodically calibrated high voltage meter.

1. Set the brightness to minimum.
2. Measure the High Voltage. The meter reading should indicate **31.0 +0.7, -1.5kV**. If the meter indication is out of tolerance, immediate service and correction is required to prevent the possibility of premature component failure.
3. To prevent the possibility of X-Radiation, it is essential to use the specified picture tube.

## 2 Location of Controls and Circuit Boards

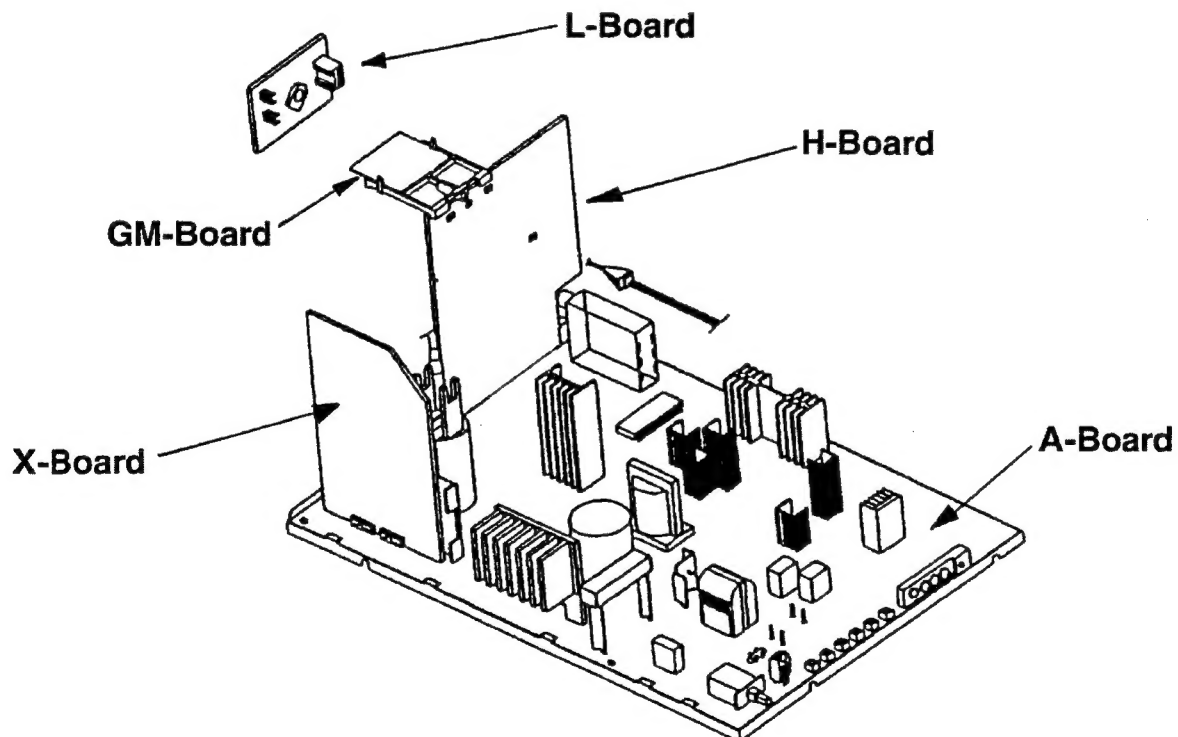
### 2.1. REAR VIEW



### 2.2. LOCATION AND FUNCTION NAME OF CIRCUIT BOARD

A - Main  
H - Rear Av  
L - Crt Board  
X - Pin Cushion

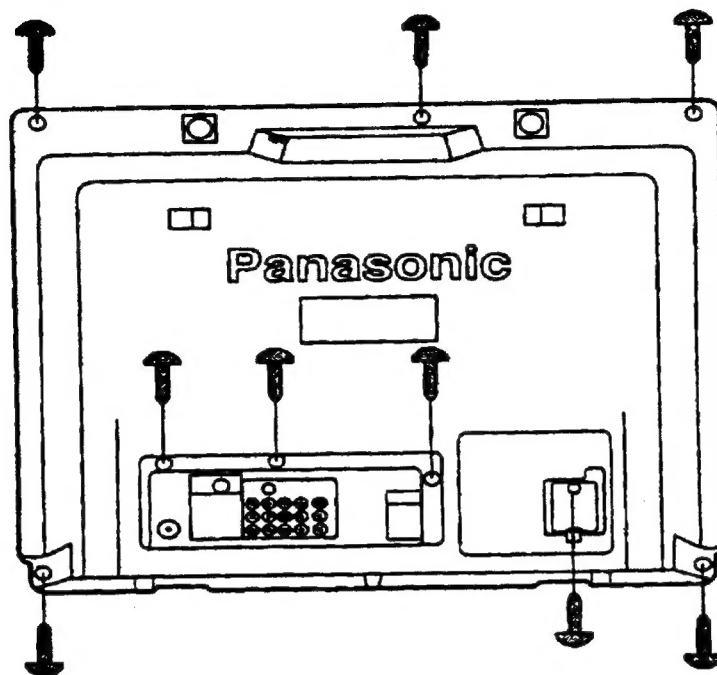
GM-GM Board (SINGAPORE ONLY)



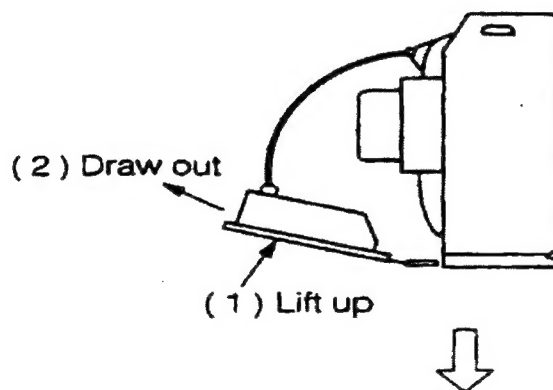
### 3 Service Hints

#### 3.1. HOW TO MOVE CHASSIS INTO SERVICE POSITION.

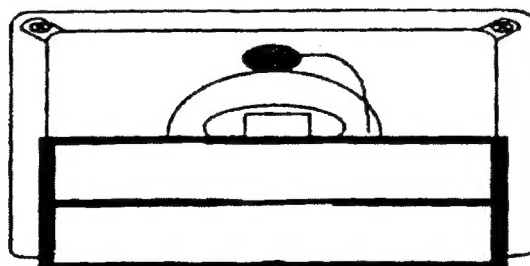
1. Remove 9 screws.



2. Draw out Main Chassis.



3. Stand the Main Chassis.



## 4 MARKET MODE FUNCTION

### Outline:

MPU controls the functions switching for each ICs through IIC bus in this chassis. The following setting and adjustment can be adjusted by remote control in Market Mode.

#### 1. Selection of Market Mode

Adjust the VOLUME "zero" and set OFF TIMER Button to 30 min. Then, simultaneously press the RECALL Button on the remote control and the VOLUME DOWN button - the TV set.

#### 2. Selection of CHK Mode

Cursor moves each CHK Mode by pressing "1" or "2" of 10 key button on the remote control.

#### 1. Option Code Setting Mode (CHK 1)

If the memory IC (IC1102) is replaced, option code should be re-memorized. Option code can be changed by pressing Volume "+" or "-" button. To memorize, press "0" of the 10 key button.

Display	Adj. Range
COLOUR SYSTEM	0 ~ 6
MX 10A	OFF / ON
C4 BIT	OFF / ON
NOISE MUTE	OFF / ON
SPEED	OFF / ON
VCR / GAME	OFF / ON
YUV	OFF / ON
AV3	OFF / ON
STEREO	OFF / ON
GEO	0 ~ 2
SASO	0 ~ 2
TEXT	OFF / ON
PANA DISPLAY	OFF / ON
SOUND SYS	0 ~ 5

#### 2. VCJ Adjustment Mode

To change the screen (item) in CHK mode, press "3" or "4" of the 10 key button. Then the Date and Level changes by pressing Volume "+" or "-" button.

Display	Adj. Range
SUB COLOUR	00H ~ 3FH
COLOUR	0 ~ 63
RF AGC	00H ~ FFH
SECAM B-Y	00H ~ 0FH
SECAM R-Y	00H ~ 0FH
B-Y	00H ~ 0FH
R-Y	00H ~ 0FH
SUB TEXT CONT	00H ~ 3FH
SHARPNESS	0 ~ 63
SUB Y CONT	00H ~ 3FH
CONT	0 ~ 63
SUB BRIGHT	00H ~ FFH
BRIGHT	0 ~ 63
SUB NTSC-TINT	00H ~ 3FH

### 3. Pincushion Adjustment Mode

To change the screen (item) in CHK mode, press "3" or "4" of the 10 key buttons. Then the Date and Level changes by pressing Volume "+" or "-" button.

Display	Adj. Range
PARABOLA	00H ~ 3FH
60 V-HEIGHT	00H ~ 3FH
50 V-HEIGHT	00H ~ 3FH
SUB GEO	00H ~ 3FH
GEOMAGNETIC	-9 AUTO 9
V CENTER	00H ~ 07H
50Hz CENTER	00H ~ 1FH
EW-CORNER 1	00H ~ 0FH
TRAPEZOID	00H ~ 3FH
V-LINEAR	00H ~ 3FH
60 VS CORRECT	00H ~ 3FH
50 VS CORRECT	00H ~ 3FH
H-WIDTH	00H ~ 3FH

Note : Picture will be changed to one horizontal line by pressing "5" of the 10 key button in the remote control. (1 - 5).

### 4. White Balance Adjustment Mode

To change the screen (item) in CHK mode, press "3" or "4" of the 10 key buttons. Then the Date and Level changes by pressing Volume "+" or "-" button.

Display	Adj. Range
B. DR	00H ~ FFH
G. DR	00H ~ FFH
SUB.BR	00H ~ FFH
BRIGHT	0 ~ 63
B - CUT	00H ~ FFH
G - CUT	00H ~ FFH
R - CUT	00H ~ FFH

## 5 ADJUSTMENT PROCEDURE

### 5.1. B VOLTAGE

Item/Preparation	Adjustment Procedure
1. Operate the TV set.	1. Confirm that the indicated test points for the specified voltage: TPA 140 : $141 \pm 2V$ TPA 12 : $12 \pm 1.0V$ TPA 9 : $9 \pm 1V$ TPA 5 & TPA 32 : $5 \pm 1V$ TPA 220 : $220 \pm 15V$
2. Set controls : (MARKET MODE CHK 2) Bright ..... Minimum Contrast ..... Minimum Volume ..... Minimum	

### 5.2. RF AGC

Item/Preparation	Adjustment Procedure
1. Receive a colour bar pattern. 2. Set the input level to 66 (+1.2) db. (75Ω opened) 3. Connect an oscilloscope to AGC : TPA 20 with DC mode.	1. Set RF AGC Control such as to procedure a snowy picture. 2. Set RF AGC Control at the point just before the voltage at AGC : TPA 20 begins to drop. 3. Increase the input level by 3 db and confirm that the voltage changes.

### 5.3. HIGH VOLTAGE

Item/Preparation	Adjustment Procedure
1. Operate the TV set.  2. Receive the crosshatch pattern.  3. Set to 0 Beam (Screen Control : min. CONTRAST : min)	1. Connect a DC voltage meter to D850 cathode and confirm the voltage is $141.0 \pm 2.0V$ . 2. Connect a high voltage meter (Electrostatic Type) to an anode of the picture tube. 3. Confirm that the high voltage is within the range of $31.0 \pm 0.7V$ .

### 5.4. SUB TINT

Item/Preparation	Adjustment Procedure
1. Receive a 3.58 MHz NTSC rainbow pattern 2. Connect oscilloscope to A21 pin 6. 3. Set controls: BRT.....CENTER COLOUR.....CENTER CONTRAST....MAX NTSC TINT....CENTER AI.....OFF	1. Adjust Sub NTSC Tint so that the peak of level of waveform is similar to Fig. 3 2. Receive the Rainbow pattern (3.58 MHz NTSC) on both of Main and Sub pictures. 3. Adjust Sub NTSC Tint 2 so that the peak of level of $1.3 \pm 0.5V$

### 5.5. SUB CONTRAST

Item/Preparation	Adjustment Procedure
1. Receive a colour bar pattern.  2. Connect an oscilloscope to TPA40. 3. Connect a short jumper between D11-1 and D11-2 / TPA53 and TPA54 FBT pin 3 or TPA34 and TPA32. 4. Set controls: Picture menu ..... Dynamic Normal AI ..... off	1. Adjust Bright Colour: a = $2.4 \pm 0.2Vp-p$ 2. Adjust Sub Contrast Colour: b = $2.7 \pm 0.1Vp-p$



## 5.6. PAL COLOUR OUTPUT

Item/Preparation	Adjustment Procedure
1. Receive PAL colour bar pattern.  2. Connect an oscilloscope probe to TPA42. 3. Connect a short jumper to FBT pin 3 or TPA34 and TPA32. 4. Set control : Picture menu.....DYNAMIC NORMAL Al.....Off	1. Adjust Bright Control. <b><math>a = 2.3 \pm 0.5V_{p-p}</math></b> 2. Adjust Sub Colour control. 3. Connect the oscilloscope probe to TPA40.  4. Connect the waveform. <b><math>b = 3.1 \pm 0.5V_{p-p}</math></b>

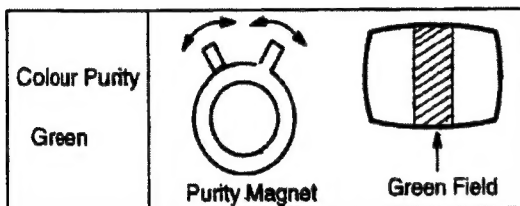
## 5.7. NTSC COLOUR OUTPUT

Item/Preparation	Adjustment Procedure
1. Apply 3.58MHz NTSC Rainbow pattern.  2. Connect an oscilloscope to TPA40.  3. Connect a short jumper to FBT pin 3 or TPA34 and TPA32. 4. Set control : Picture menu.....DYNAMIC CONTROL Channel Colour Set.....STD	1. Adjust Bright Control. <b><math>a = 2.3 \pm 0.2V_{p-p}</math></b> 2. Connect the waveform. <b><math>b = 1.3 \pm 0.5V_{p-p}</math></b>

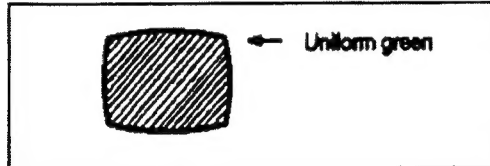
Before Colour Purity, Convergence and White Balance adjustments are attempted, V. Center, V. Height, H. Width, H. Center and Focus adjustments must be completed.

## 5.8. COLOUR PURITY

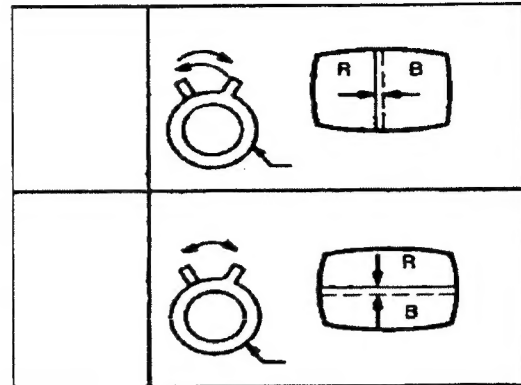
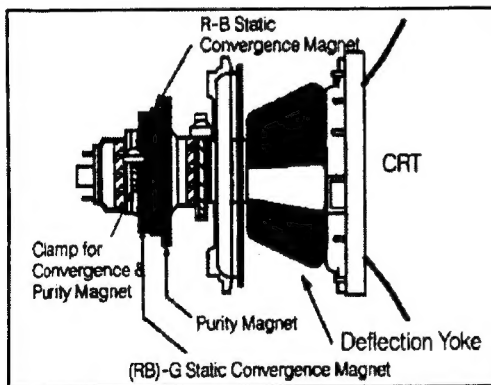
1. Set Bright and Contrast controls to their maximum positions.
2. Operate the TV set over 15 minutes.
3. Full degauss the picture tube by using an external degaussing coil. By rotating R-B static convergence magnet.
4. Apply a crosshatch pattern signal and adjust roughly the static convergence magnets.
5. Apply a green pattern signal.
6. Loosen a clamp screw for the deflection yoke and move the deflection yoke as close to the purity magnet as possible.
7. Adjust the purity magnet so that a vertical green field is obtained at the center of the screen.



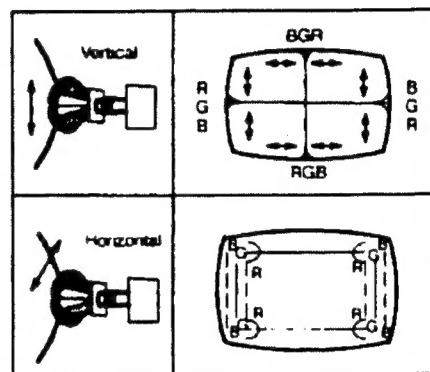
8. Slowly press the deflection yoke and set it where a uniform green field is obtained.



9. Adjust roughly the Low Light controls and make sure that a uniform white field is obtained.
10. Tighten the clamp screw.



4. Adjust Red and Blue with Green line at center of the screen by rotating (RB)-G static convergence magnet.
5. Lock convergence magnets with silicone sealer.
6. Remove the DY wedges and slightly tilt the deflection yoke vertically.



7. Fix the deflection yoke by re-inserting the DY wedges.
8. If purity error is found, repeat "Colour Purity" adjustment.

## 5.9. CONVERGENCE

1. Apply a crosshatch pattern signal and set Contrast control to the maximum position.
2. Adjust Bright control to obtain a clear pattern.
3. Adjust Red and Blue line at center of the screen.

## 5.10. WHITE BALANCE (MARKET MODE CHK 3)

### Preparation

1. Receive a colour bar signal with colour "OFF", and operate the TV set for more than 15 minutes.
2. Set the picture menu to "DYNAMIC NORMAL" and the AI to off.
3. Connect an oscilloscope to TPL7 with DC mode.
4. Set the TV set to Market Mode : white balance adjustment (CHK 3).
5. Screen VR : Min.
6. Set the data level of SUB BRIGHT, R, G, B-CUTOFF and R, G, B-DRIVE to the table values.

Display	Data Level
R-CUT OFF	63
G-CUT OFF	128
B-CUT OFF	63
R-DRIVE	128
B-DRIVE	128
SUB BRIGHT	63

### Adjustment

1. Select G-CUTOFF adjustment mode and collapse vertical scan.
2. Adjust G-CUTOFF control to become the DC=0 V to video level at 180 V as shown in Fig. 1.

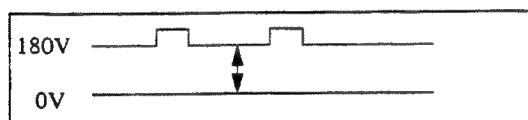
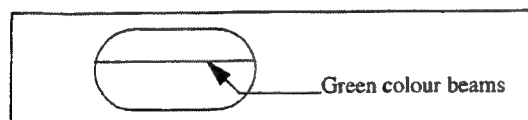


Fig. 1

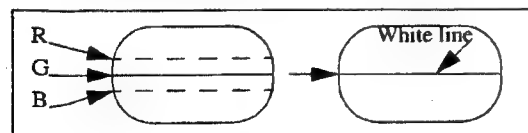
3. Slowly turn the screen control clockwise until a green colour horizontal line appears on the picture tube. This is the setting point for the screen control.

Note:

Do not adjust the G-CUTOFF setting in the following procedure.



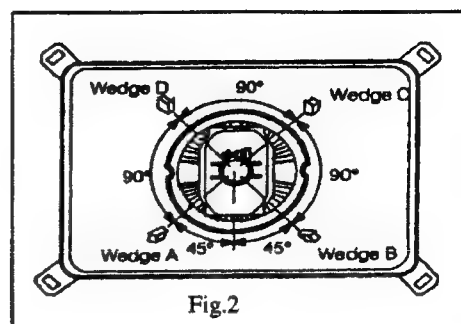
4. Adjust the remaining R and B-CUTOFF controls so as to get a white horizontal line on the screen.



5. Return to full field SCAN by pushing the position 5 key on the remote control.
6. Adjust the R-Drive and B-Drive controls as to obtain a uniform white on the white bar of the greyscale pattern.
7. Confirm correct B/W rendition and greyscale tracking or repeat CUTOFF and drive control setup.

Note:

Write down the original value for each address adjustment before adjusting anything.

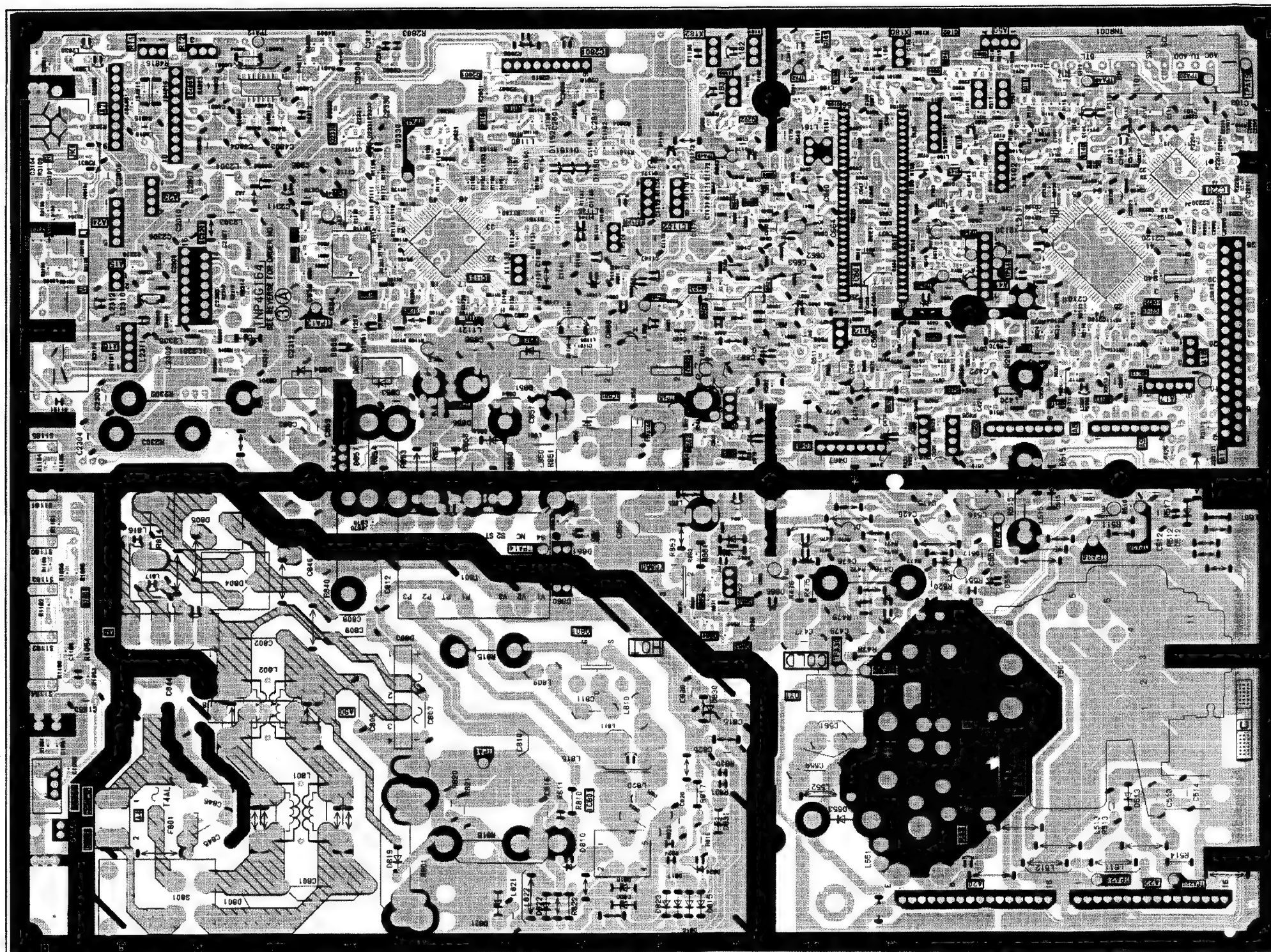


8. Wedge A shown in Fig. 2 should be fixed within a range of 45° to the left of the vertical line as shown.
9. After inserting wedge A, insert wedges B, C and D. The wedges should be set 90° apart from each other.
10. Be certain that the four wedges are firmly fixed and the deflection yoke is tightly clamped in place otherwise the deflection yoke may shift its position and cause a loss of convergence and purity.

## 6 Memo

## 7 CONDUCTOR VIEWS

### 7.1. A-Board (TNP4G164AH SINGAPORE ONLY) (TNP4G164AK MIDDLE EAST ONLY)





8 SCHEMATIC DIAGRAMS

8.1. SCHEMATIC DIAGRAM FOR MODEL TC-29P80R  
(MX-10A CHASSIS)

Important Safety Notice

Components identified by Δ mark have special characteristics important for safety.  
When replacing any of these components, use only manufacturer's specified parts.

Notes:

1. **Resistor**  
All resistors are carbon 1/4W resistor, unless marked as follows:  
Unit of resistance is OHM [Ω] (K=1,000, M=1,000,000).
- |   |                |   |               |
|---|----------------|---|---------------|
| ○ | : Nonflammable | ⊠ | : Metal Oxide |
| △ | : Solid        | ⊙ | : Metal Film  |
| ⊞ | : Wire Wound   | ⊗ | : Fuse        |
2. **Capacitor**  
All capacitors are ceramic 50V capacitor, unless marked as follows:  
Unit of capacitance is μF, unless otherwise noted.
- |   |                            |    |                   |
|---|----------------------------|----|-------------------|
| ⊗ | : Temperature Compensation | ⎓  | : Electrolytic    |
| Ⓜ | : Polyester                | ⎓⎓ | : Bipolar         |
| Ⓜ | : Metalized Polyester      | ①  | : Dipped Tantalum |
| ⊞ | : Polypropylene            | ②  | : Z-Type          |
3. **Coil**  
Unit of inductance is μF, unless otherwise noted.
4. **Test Point**  
○ : Test Point position
5. **Earth Symbol**  
⎓ : Chassis Earth (Cold)      ⎓ : Line Earth (Hot)
6. **Voltage Measurement**  
Voltage is measured by a DC voltmeter.  
Conditions of the measurement are the following:
- |                         |       |                        |
|-------------------------|-------|------------------------|
| Power Source            | ..... | AC 110-240V, 50/60 Hz  |
| Receiving Signal        | ..... | Colour Bar signal (RF) |
| All customer's controls | ..... | Maximum positions      |
7. Number in red circle indicates waveform number.  
(See waveform pattern table.)
8. When arrow mark (↗) is found, connection is easily found from the direction of arrow
9. Indicates the major signal flow.    ➡ : Video    ⇔ : Audio
10. This schematic diagram is the latest at the time of printing and subject to change without notice.

Remarks:

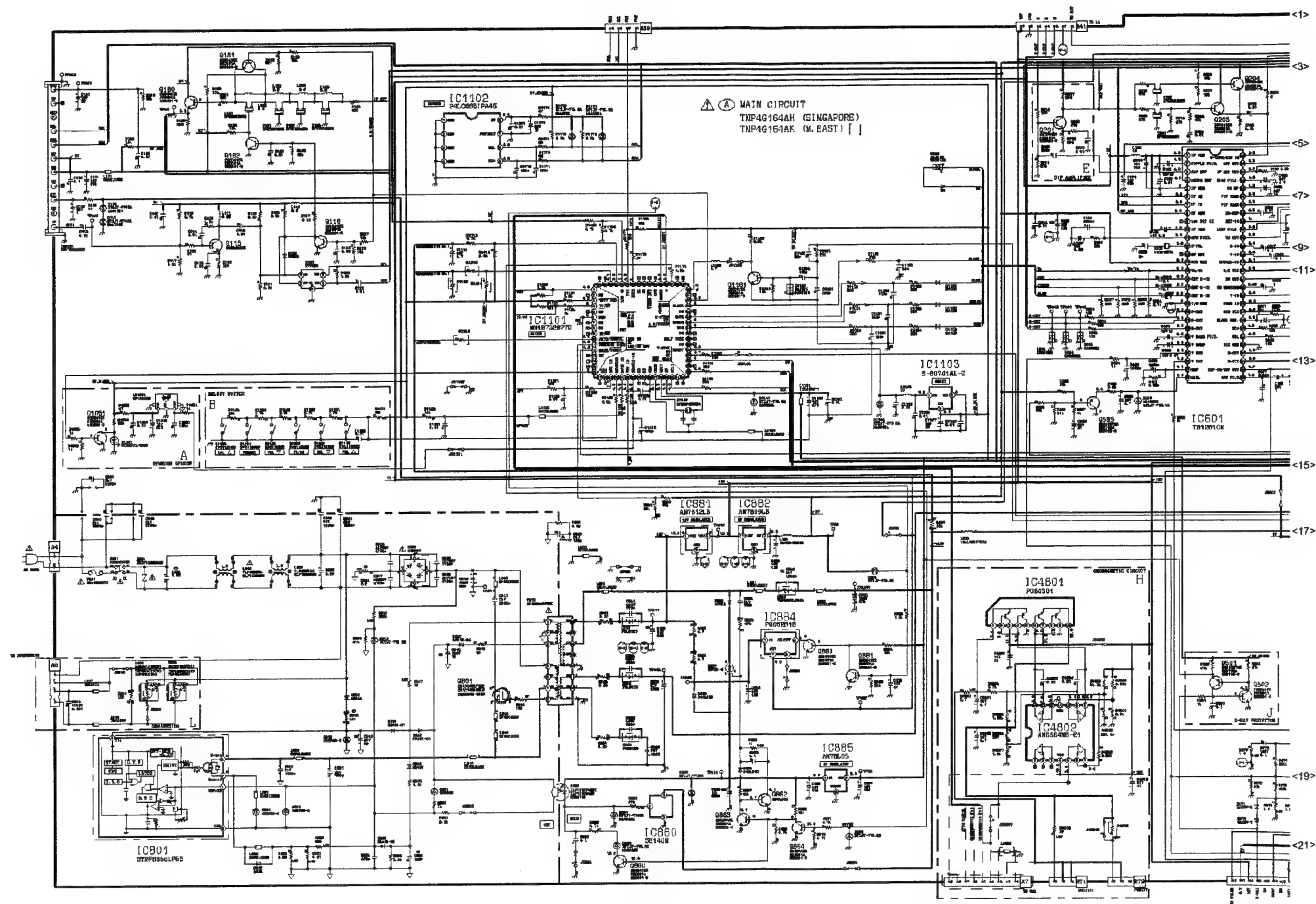
1. The Power Circuit contains a circuit area which uses a separate power supply to isolate the earth connection.  
The circuit is defined by HOT and COLD indications in the schematic diagram. Take the following precautions.  
All circuits, except the Power Circuit, are cold.
- Precautions
- Do not touch the hot part or the hot and cold parts at the same time or you may be shocked.
  - Do not short- circuit the hot and cold circuits or a fuse may blow and parts may break.
  - Do not connect an instrument, such as an oscilloscope, to the hot and cold circuits simultaneously or a fuse may blow.  
Connect the earth of instruments to the earth connection of the circuit being measured.
  - Make sure to disconnect the power plug before removing the chassis.
2. Following diodes are interchangeable.  
MA150- MA162 (Replacement part)



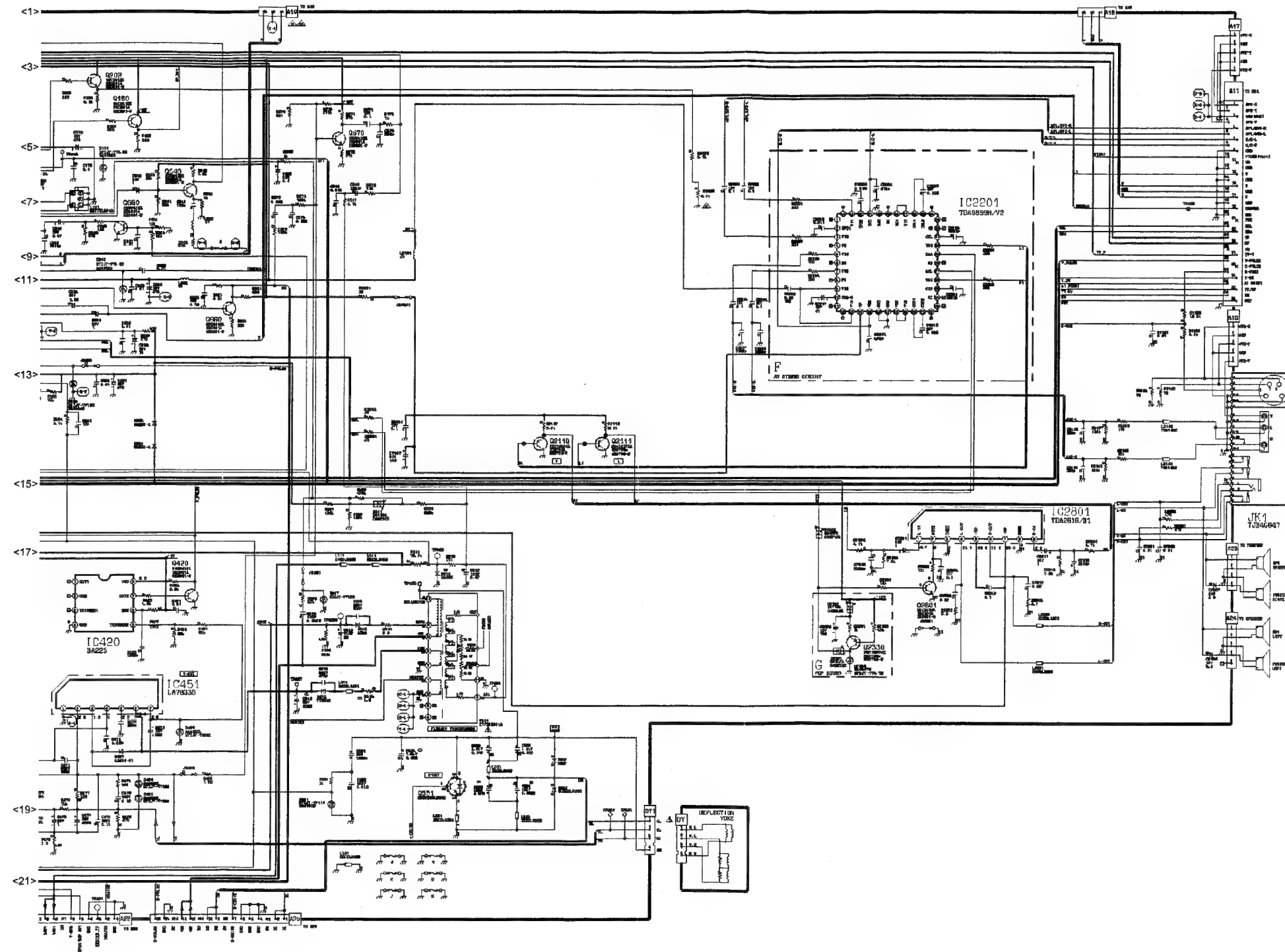


## 8.2. Main Board (TNP4G164AH/AK)

Main Board (1/2)



Main Board (2/2)

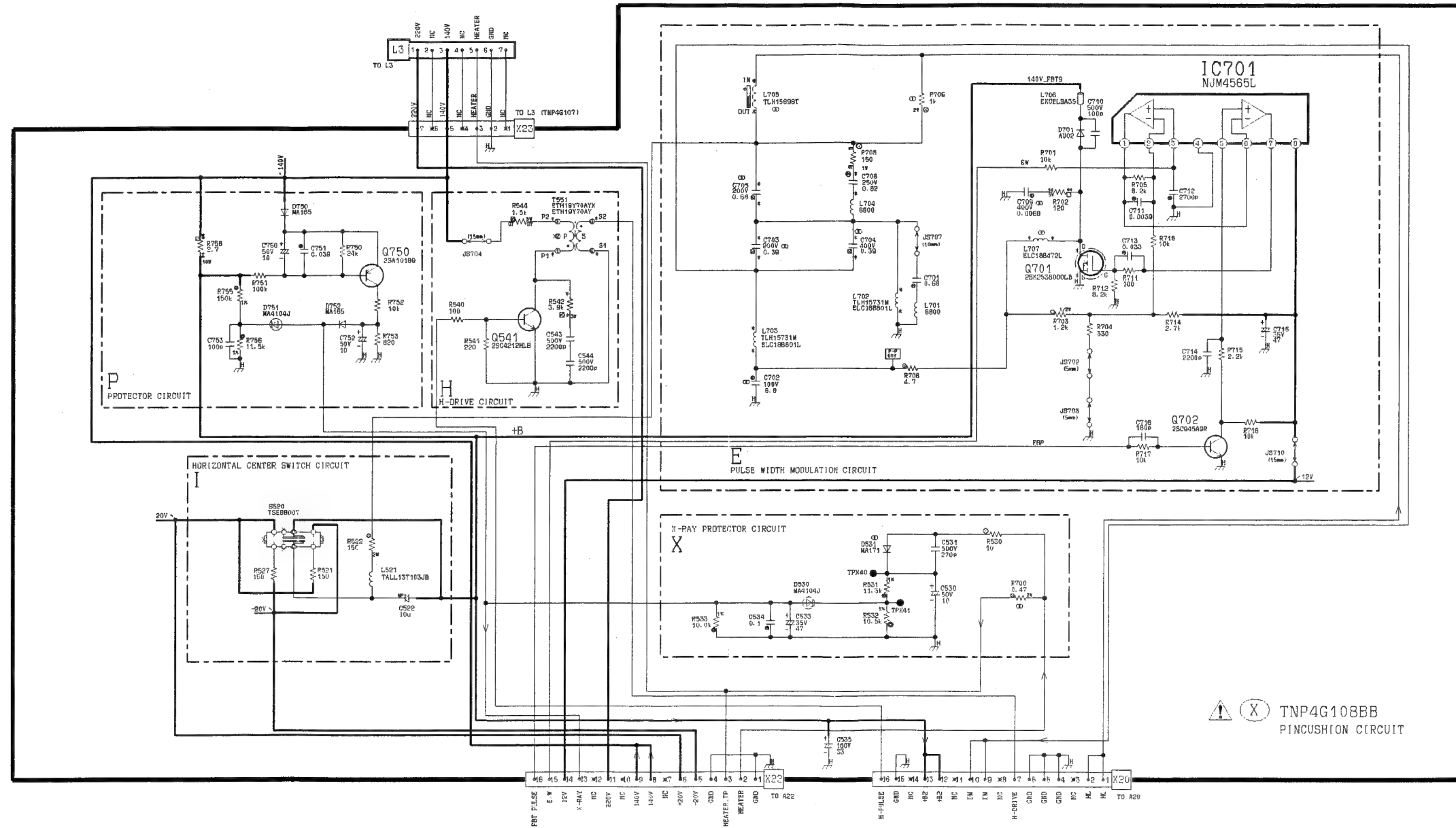








### 8.5. Pincushion Circuit (TNP4G108BB)

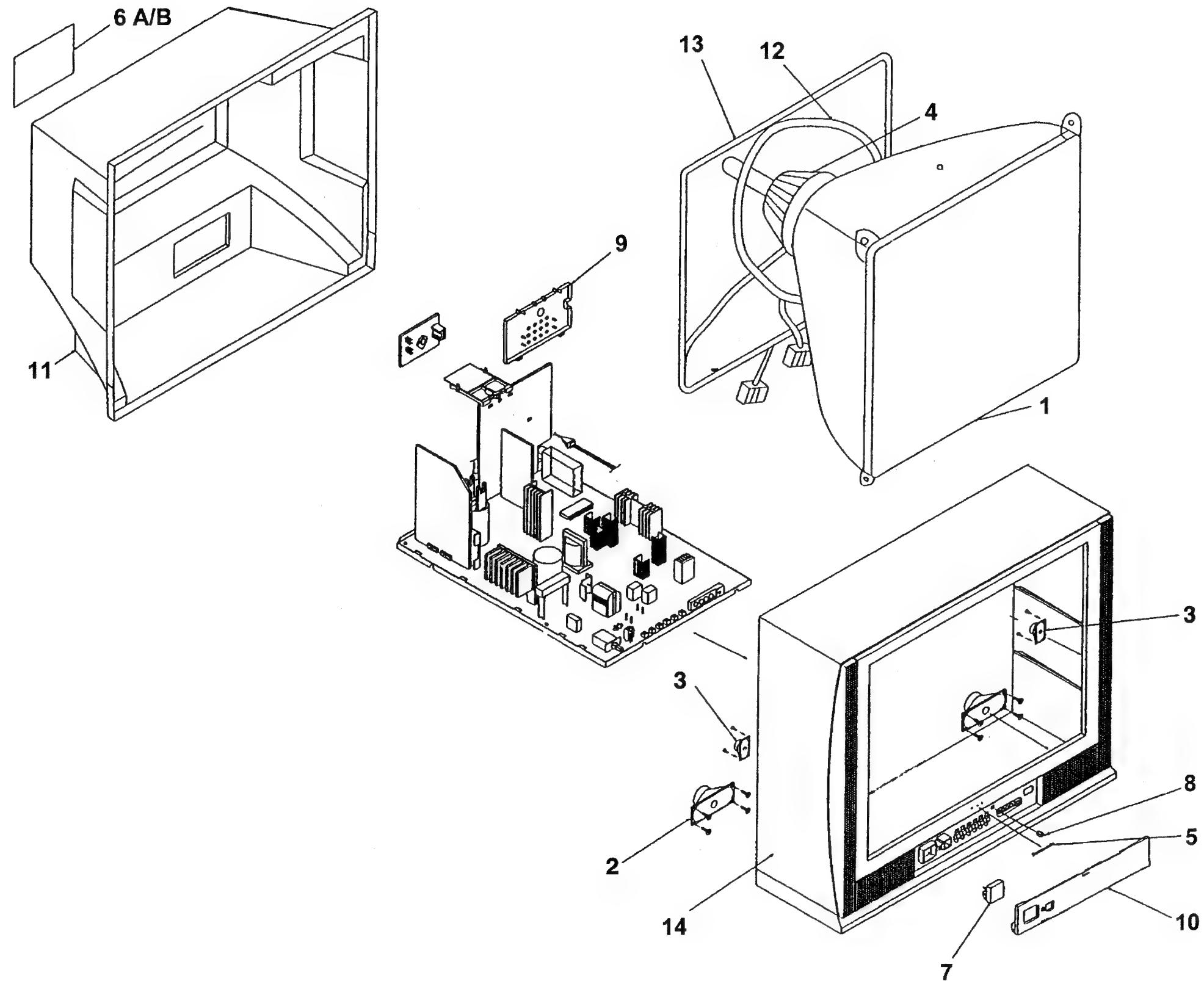








## 9 PARTS LOCATION





## 10 Replacement Parts List

## 10.1. Replacement Parts List Notes

## Important Safety Notice

*Components identified by  mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.*

**RTL (Retention Time Limited)**

**Note:** The marking (RTL) indicates that the Retention Time is Limited for this item.

After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of availability is dependant on the type of assembly, and in accordance with the laws governing part and product retention. After the end of this period, the assembly will no longer be available.

**Abbreviation of part name and description**

### 1. Resistor

**Example:**

ERD25TJ104 C 100KOHM, J, 1/4W

Type	Allowance
------	-----------

## 2. Capacitor

**Example:**

ECKF1H103ZF C 0.01UF, Z, 50V

Type	Allowance
------	-----------

Type	Allowance
C : Carbon	F : $\pm 1\%$
F : Fuse	G : $\pm 2\%$
M : Metal Oxide	J : $\pm 5\%$
Metal Film	K : $\pm 10\%$
S : Solid	M : $\pm 20\%$
W : Wire Wound	

Type	Allowance
C : Ceramic	C : $\pm 0.25\text{pF}$
E : Electrolytic	D : $\pm 0.5\text{pF}$
P : Polyester	F : $\pm 1\text{pF}$
Polypropylene	G : $\pm 3\text{pF}$
T : Tantalum	J : $\pm 5\text{pF}$
	K : $\pm 10\text{pF}$
	L : $\pm 15\text{pF}$
	M : $\pm 20\text{pF}$
	P : +100%, -0%
	Z : +80%, -20%

## 10.2. Replacement Parts List

### Mechanical Parts - TC-29P80R

Ref. No.	Part No.	Part Name & Description	Remarks
1	M68LQK186XH	PICTURE TUBE	s
2	EASG12D559A2	SPEAKER	
3	EASG7D507A2	TWEETER	
	EUR511042	REMOTE CONTROL	
4	KDY4UH986F1	DEFLECTION YOKE	s
5	TEM4G3010	PANASONIC BADGE	s
6	TEM4G0740	MODEL NAME PLATE	
		(M' EAST ONLY)	s
	TEM4G0738	MODEL NAME PLATE	
		(S' PORE ONLY)	
7	TEX4G87610	POWER BUTTON	
8	TEK6935	DOOR SWITCH	
	TES4G406	COIL SPRING	
	THT4G1011R	CRT SCREW	
9	TKP4G12312	REAR AV BRACKET	
10	TKP4G12428-1	DOOR	
11	TKU4G9412-1	BACK COVER	
12	TLK4G9022T-1	ROTATION COIL	s
13	TLK4G9048S	DEGAUSSING COIL	s
	TMM4G502	RUBBER WASHER	
	TMM4G503	RUBBER WEDGE	
NLA	TNP4G107AV	L BOARD	s
NLA	TNP4G108BB	X BOARD	s
NLA	TNP4G118AN	GM BOARD	s
		(S' PORE ONLY)	
NLA	TNP4G164AH	A BOARD	s
		(S' PORE ONLY)	
NLA	TNP4G164AK	A BOARD	
		(M' EAST ONLY)	
NLA	TNP4G173AC	H BOARD	s
	TPC4G46905	CARTON	
		(S' PORE ONLY)	
	TPC4G46907	CARTON	
		(M' EAST ONLY)	
	TPD4G1079	CUSHION (TOP)	
		(S' PORE ONLY)	
	TPD4G1083	CUSHION (TOP)	
		(M' EAST ONLY)	
	TPD4G2071	CUSHION (BOTTOM)	
		(S' PORE ONLY)	
	TXFPDE2UY2H	CUSHION (BOTTOM)	
		(M' EAST ONLY)	
	TPE4G14023	SET COVER	
		(S' PORE ONLY)	
	TPE4G14038	SET COVER	
		(M' EAST ONLY)	
	TPE4G14024	TOP COVER	
	TQB4G1993	FAN BAG	
		(S' PORE ONLY)	
	TQB4G1999	FAN BAG	
		(M' EAST ONLY)	
	TSM10032-3	MAGNET	
	TSN63115-4	PURITY MAGNET	
	TSX4G111H1	AC POWER CORD	s
		(S' PORE ONLY)	
	TSX4G112F1	AC POWER CORD	s
		(M' EAST ONLY)	
14	TXPKY01TX2S	CABINET ASSY	
	RESISTORS		
R106	ERJ6GEYJ823	M 82KOHM, J, 1/10W	
R108	ERJ6GEYJ153	M 15KOHM, J, 1/10W	
R110	ERJ6GEYJ100	M 100OHM, J, 1/10W	
R115	ERJ6GEYJ472	M 4.7KOHM, J, 1/10W	
R116	ERJ6GEYJ470	M 470OHM, J, 1/10W	
R117	ERJ6GEYJ122	M 1.2KOHM, J, 1/10W	
R118	ERJ6GEYJ122	M 1.2KOHM, J, 1/10W	
R119	ERJ6GEYJ121	M 1200OHM, J, 1/10W	
R120	ERJ6GEYJ682	M 6.8KOHM, J, 1/10W	
R121	ERJ6GEYJ222	M 2.2KOHM, J, 1/10W	
R125	ERJ6GEYJ222	M 2.2KOHM, J, 1/10W	

Ref. No.	Part No.	Part Name & Description	Remarks
R478	ERDS2TJ101	C 100OHM, J, 1/4W	
R479	ERG1SJ471E	M 470OHM, J, 1W	
R501	ERDS2TJ102	C 1KOHM, J, 1/4W	
R502	ERJ6GEYJ473	M 47KOHM, J, 1/10W	
R503	ERJ6GEYJ473	M 47KOHM, J, 1/10W	
R506	ERJ6GEYJ102	M 1KOHM, J, 1/10W	
R507	ERJ6GEYJ104	M 100KOHM, J, 1/10W	
R508	ERJ6GEYJ104	M 100KOHM, J, 1/10W	
R509	ERJ6GEYJ474	M 470KOHM, J, 1/10W	
R510	ERJ6GEYJ824	M 820KOHM, J, 1/10W	
R511	ER050CKF7322	M73.2KOHM, F, 1/2W	
R512	ERDS2TJ223	C 22KOHM, J, 1/4W	
R513	ERQ14AJ2R0E	F 2.0OHM, J, 1/4W	
R514	ERDS1TJ394	C 390KOHM, J, 1/2W	
R515	ERQ1RJW1R0E	F 1OHM, J, 1W	
R517	ERD25VJ472	C 4.7KOHM, J, 1/4W	
R518	ERJ6GEYJ103	M 10KOHM, J, 1/10W	
R520	ERG1SJ333E	M 33KOHM, J, 1W	
R530	ERQ14AJ100E	F 10OHM, J, 1/4W	
R531	ER0S2CKF1102	M 11KOHM, F, 1/4W	
R532	ER0S2CKF1052	M10.5KOHM, F, 1/4W	
R533	TR0S2THF1002	M 10KOHM, F, 1/4W	
R540	ERDS2TJ331	C 330OHM, J, 1/4W	
R541	ERDS2TJ331	C 330OHM, J, 1/4W	
R542	ERG3FJ392H	M 3.9KOHM, J, 3W	
R544	ERQ3CJ122	F 1.2KOHM, J, 3W	
R551	ERDS2TJ102	C 1KOHM, J, 1/4W	
R570	ERJ6GEYJ102	M 1KOHM, J, 1/10W	
R571	ERJ6GEYJ273	M 27KOHM, J, 1/10W	
R572	ERJ6GEYJ273	M 27KOHM, J, 1/10W	
R573	ERJ6GEYJ274	M 270KOHM, J, 1/10W	
R574	ERJ6GEYJ563	M 56KOHM, J, 1/10W	
R575	ERJ6GEYJ104	M 100KOHM, J, 1/10W	
R576	ERJ6GEYJ564	M 560KOHM, J, 1/10W	
R584	ERJ6GEYJ272	M 2.7KOHM, J, 1/10W	
R585	ERJ6GEYJ392	M 3.9KOHM, J, 1/10W	
R586	ERJ6GEYJ153	M 15KOHM, J, 1/10W	
R587	ERJ6GEYJ102	M 1KOHM, J, 1/10W	
R588	ERJ6GEYJ513	M 51KOHM, J, 1/10W	
R589	ERJ6GEYJ683	M 68KOHM, J, 1/10W	
R608	ERJ6GEYJ101	M 100OHM, J, 1/10W	
R609	ERJ6GEYJ101	M 100OHM, J, 1/10W	
R613	ERJ6GEYJ101	M 100OHM, J, 1/10W	
R614	ERJ6GEYJ101	M 100OHM, J, 1/10W	
R615	ERJ6GEYJ101	M 100OHM, J, 1/10W	
R624	ERJ6GEYJ272	M 2.7KOHM, J, 1/10W	
R625	ERJ6GEYJ391	M 390OHM, J, 1/10W	
R626	ERJ6GEYJ391	M 390OHM, J, 1/10W	
R627	ERJ6GEYJ391	M 390OHM, J, 1/10W	
R635	ERJ6GEYJ224	M 220KOHM, J, 1/10W	
R638	ERDS1VJ271	C 270OHM, J, 1/2W	
R640	ERJ6GEYJ563	M 56KOHM, J, 1/10W	
R641	ERJ6GEYJ223	M 22KOHM, J, 1/10W	
R642	ERJ6GEYJ182	M 1.8KOHM, J, 1/10W	
R643	ERDS2TJ471	C 470OHM, J, 1/4W	
R644	ERJ6GEYJ102	M 1KOHM, J, 1/10W	
R648	ERJ6GEYJ181	M 180OHM, J, 1/10W	
R649	ERJ6GEYJ471	M 470OHM, J, 1/10W	
R650	ERJ6GEYJ103	M 10KOHM, J, 1/10W	
R651	ERJ6GEYJ103	M 10KOHM, J, 1/10W	
R660	ERJ6GEYJ331	M 330OHM, J, 1/10W	
R661	ERJ6GEYJ681	M 680OHM, J, 1/10W	
R665	ERJ6GEYJ822	M 8.2KOHM, J, 1/10W	
R700	ERQ1CJPR82S	F 0.82OHM, J, 1W	
R701	ERDS2TJ103	C 10KOHM, J, 1/4W	
R702	ERF5ZJ121	W 120OHM, J, 5W	
R703	ERDS1FJ222	C 2.2KOHM, J, 1/2W	
R704	ERDS2TJ121	C 120OHM, J, 1/4W	
R705	ERDS2TJ822	C 8.2KOHM, J, 1/4W	
R706	ERQ14AJ4R7E	F 4.7OHM, J, 1/4W	
R708	ERQ1CJ151	F 150OHM, J, 1W	
R976	ERDS2TJ101	C 100OHM, J, 1/4W	

Ref. No.	Part No.	Part Name & Description	Remarks
R977	ERDS2TJ561	C 560OHM, J, 1/4W	
R978	ERDS2TJ101	C 100OHM, J, 1/4W	
R987	ERDS2TJ471	C 470OHM, J, 1/4W	
R988	ERDS2TJ331	C 330OHM, J, 1/4W	
R992	ERDS2TJ561	C 560OHM, J, 1/4W	
R1051	ERJ6GEYJ102	M 1KOHM, J, 1/10W	
R1053	ERJ6GEYJ470	M 470OHM, J, 1/10W	
R1054	ERDS2TJ561	C 560OHM, J, 1/4W	
R1055	ERJ6GEYJ102	M 1KOHM, J, 1/10W	
R1056	ERJ6GEYJ102	M 1KOHM, J, 1/10W	
R1101	ERJ6GEYJ562	M 5.6KOHM, J, 1/10W	
R1102	ERJ6GEYJ332	M 3.3KOHM, J, 1/10W	
R1103	ERJ6GEYJ123	M 12KOHM, J, 1/10W	
R1105	ERJ6GEYJ102	M 1KOHM, J, 1/10W	
R1110	ERJ6GEYJ101	M 100OHM, J, 1/10W	
R1111	ERJ6GEYJ472	M 4.7KOHM, J, 1/10W	
R1112	ERJ6GEYJ472	M 4.7KOHM, J, 1/10W	
R1113	ERJ6GEYJ332	M 3.3KOHM, J, 1/10W	
R1114	ERJ6GEYJ332	M 3.3KOHM, J, 1/10W	
		(S'PORE ONLY)	
R1120	ERJ6GEYJ101	M 100OHM, J, 1/10W	
R1121	ERJ6GEYJ101	M 100OHM, J, 1/10W	
R1123	ERJ6GEYJ152	M 1.5KOHM, J, 1/10W	
R1124	ERJ6GEYJ152	M 1.5KOHM, J, 1/10W	
R1125	ERJ6GEYJ102	M 1KOHM, J, 1/10W	
R1126	ERJ6ENF1002	M 10KOHM, 1/10W	
R1130	ERJ6GEYJ221	M 220OHM, J, 1/10W	
R1131	ERJ6GEYJ221	M 220OHM, J, 1/10W	
R1132	ERJ6GEYJ221	M 220OHM, J, 1/10W	
R1150	ERJ6GEYJ331	M 330OHM, J, 1/10W	
R1151	ERJ6GEYJ331	M 330OHM, J, 1/10W	
R1152	ERJ6GEYJ331	M 330OHM, J, 1/10W	
R1153	ERJ6GEYJ271	M 270OHM, J, 1/10W	
R1154	ERJ6GEYJ391	M 390OHM, J, 1/10W	
R1155	ERJ6GEYJ391	M 390OHM, J, 1/10W	
R1156	ERJ6GEYJ391	M 390OHM, J, 1/10W	
R1160	ERJ6GEYJ103	M 10KOHM, J, 1/10W	
R1161	ERJ6GEYJ273	M 27KOHM, J, 1/10W	
R1162	ERJ6GEYJ222	M 2.2KOHM, J, 1/10W	
R1166	ERJ6GEYJ223	M 22KOHM, J, 1/10W	
R1168	ERJ6GEYJ472	M 4.7KOHM, J, 1/10W	
R1169	ERJ6GEYJ472	M 4.7KOHM, J, 1/10W	
R1170	ERJ6GEYJ560	M 560HM, J, 1/10W	
R1171	ERJ6GEYJ560	M 560HM, J, 1/10W	
R1172	ERJ6GEYJ332	M 3.3KOHM, J, 1/10W	
R1173	ERJ6GEYJ332	M 3.3KOHM, J, 1/10W	
R1174	ERJ6GEYJ470	M 470HM, J, 1/10W	
R1175	ERJ6GEYJ182	M 1.8KOHM, J, 1/10W	
R1176	ERJ6GEY0R00	M 0OHM, J, 1/10W	
R1177	ERJ6GEYJ101	M 100OHM, J, 1/10W	
R1180	ERJ6ENF1002	M 10KOHM, 1/10W	
R1181	ERJ6ENF2201	M 2.2KOHM, 1/10W	
R1182	ERJ6ENF2201	M 2.2KOHM, 1/10W	
R1183	ERJ6ENF3301	M 3.3KOHM, 1/10W	
R1184	ERJ6ENF4701	M 4.7KOHM, 1/10W	
R1185	ERJ6ENF1002	M 10KOHM, 1/10W	
R1190	EROS2CKF1202	M 12KOHM, F, 1/4W	
R1191	EROS2CHF8201	M 8.2KOHM, F, 1/4W	
R2001	ERQ1CJP220S	F 220HM, J, 1W	
R2003	ERJ6GEY0R00	M 0OHM, J, 1/10W	
R2004	ERJ6GEY0R00	M 0OHM, J, 1/10W	
R2005	ERJ6GEYJ512	M 5.1KOHM, J, 1/10W	
R2006	ERJ6GEYJ822	M 8.2KOHM, J, 1/10W	
R2112	ERJ6GEYJ222	M 2.2KOHM, J, 1/10W	
R2113	ERJ6GEYJ222	M 2.2KOHM, J, 1/10W	
R2201	ERJ6GEYJ331	M 330OHM, J, 1/10W	
R2202	ERJ6GEYJ331	M 330OHM, J, 1/10W	
R2203	ERJ6GEYJ331	M 330OHM, J, 1/10W	
R2204	ERJ6GEYJ331	M 330OHM, J, 1/10W	
R2220	ERJ6GEYJ331	M 330OHM, J, 1/10W	
R3092	ERJ3GEYJ331	M 330OHM, J, 1/16W	
R3101	ERJ6GEYJ750	M 750HM, 1/10W	
R3102	ERJ6GEYJ750	M 750HM, 1/10W	
R3106	ERJ6GEYJ103	M 10KOHM, J, 1/10W	

Ref. No.	Part No.	Part Name & Description	Remarks
R3107	ERJ6GEYJ104	M 100KOHM, J, 1/10W	
R3108	ERJ6GEYJ103	M 10KOHM, J, 1/10W	
R3109	ERJ6GEYJ104	M 100KOHM, J, 1/10W	
R4803	ERX12SJ2R7E	M 2.70HM, J, 1/2W	
R4804	ERJ6GEYJ272	M 2.7KOHM, J, 1/10W	
R4805	ERJ6ENF1331	M1.33KOHM, 1/10W	
R4806	ERJ6ENF3320	M 332OHM, 1/10W	
R4807	ERJ6ENF1001	M 1KOHM, 1/10W	
R4808	ERJ6ENF3832	M38.3KOHM, 1/10W	
R4809	ERJ6ENF9091	M 9.09OHM, 1/10W	
R4810	ERJ6ENF2213	M 221KOHM, 1/10W	
R4811	ERJ6ENF6651	M6.65KOHM, 1/10W	
R4812	EROS2CKF5621	M5.62KOHM, F, 1/4W	
R4815	ERDS1FJ180	C 180HM, J, 1/2W	
R4816	ERDS1FJ390	C 390HM, J, 1/2W	
		(S'PORE ONLY)	
R4818	ERX12SJ2R7E	M 2.70HM, J, 1/2W	
		(S'PORE ONLY)	
R4819	ERJ6GEYJ272	M 2.7KOHM, J, 1/10W	
		(S'PORE ONLY)	
R4820	ERJ6ENF1331	M1.33KOHM, 1/10W	
		(S'PORE ONLY)	
R4821	ERJ6ENF3320	M 332OHM, 1/10W	
		(S'PORE ONLY)	
R4822	ERJ6ENF1001	M 1KOHM, 1/10W	
		(S'PORE ONLY)	
R4823	ERJ6GEYJ472	M 4.7KOHM, J, 1/10W	
		(S'PORE ONLY)	
R4824	ERJ6ENF5621	M5.62KOHM, 1/10W	
		(S'PORE ONLY)	
R4825	ERJ6ENF3832	M38.3KOHM, 1/10W	
		(S'PORE ONLY)	
R4826	ERJ6ENF2213	M 221KOHM, 1/10W	
		(S'PORE ONLY)	
R4827	ERJ6ENF9091	M 9.09OHM, 1/10W	
		(S'PORE ONLY)	
R4828	ERJ6ENF6651	M6.65KOHM, 1/10W	
		(S'PORE ONLY)	
R4829	ERJ6GEYJ102	M 1KOHM, J, 1/10W	
		(S'PORE ONLY)	
R4831	ERDS1FJ220	C 220HM, J, 1/2W	
		(S'PORE ONLY)	
R4837	ERJ6GEYJ102	M 1KOHM, J, 1/10W	
		(S'PORE ONLY)	
R4840	ERJ6GEYJ102	M 1KOHM, J, 1/10W	
		(S'PORE ONLY)	
R4841	ERJ6GEYJ102	M 1KOHM, J, 1/10W	
		(S'PORE ONLY)	
R4842	ERJ6GEYJ101	M 100OHM, J, 1/10W	
		(S'PORE ONLY)	
R4843	ERJ6GEYJ471	M 470OHM, J, 1/10W	
		(S'PORE ONLY)	
R4844	ERJ6GEYJ561	M 560OHM, J, 1/10W	
		(S'PORE ONLY)	
R4850	ERJ6GEYJ104	M 100KOHM, J, 1/10W	
		(S'PORE ONLY)	
R4851	ERJ6GEYJ104	M 100KOHM, J, 1/10W	
		(S'PORE ONLY)	
R4852	ERJ6GEYJ104	M 100KOHM, J, 1/10W	
		(S'PORE ONLY)	
R4853	ERJ6GEYJ104	M 100KOHM, J, 1/10W	
		(S'PORE ONLY)	
R4854	ERJ6GEYJ101	M 100OHM, J, 1/10W	
		(S'PORE ONLY)	
R4855	ERJ6GEYJ101	M 100OHM, J, 1/10W	
		(S'PORE ONLY)	
C512	ECEA2CN47S	E 0.47UF, 160V	
C513	ECA2EM220B	E 22UF, 250V	
C514	ECKR2H331KB5	C 330PF, K, 500V	
C515	ECKR2H471KB5	C 470PF, K, 500V	
C516	ECA1VM332E	E 3300UF, 35V	
C518	ECQB1H183JF	F 0.018UF, J, 50V	
C519	ECQB1H122JF	P 1200PF, J, 50V	
C520	ECQM4562JZ	P 5600PF, J, 400V	

Ref. No.	Part No.	Part Name & Description	Remarks
C530	ECA1HM100B	E 10UF, 50V	
C531	ECKR2H271KB5	C 270PF, K, 500V	
C533	ECA1VM470B	E 47UF, 35V	
C534	ECQV1H104JM	P 0.1UF, J, 50V	
C535	ECA160V33UE	E 33UF, 160V	
C543	L7Y5P4B222K	C 2200PF, K, 500V	
C544	L7Y5P4B222K	C 2200PF, K, 500V	
C551	ECKW3D122KBR	C 1200PF, K, 2KV	
C553	ECQP1183JZ	P 0.018UF, J, 100V	
C554	ECWH16302JVB	P 3000PF, J, 1.6KV	
C558	ECWH16122JVB	P 1200PF, J, 1.6KV	
C559	ECQM4333JZ	P 0.033UF, 400V	
C560	ECWH16123JVB	P 0.012UF, J, 1.6KV	
C561	ECQM4822JZ	P 8200PF, J, 400V	
C570	ECJ2VB1H391K	C 390PF, K, 50V	
C571	ECJ2VB1C104K	C 0.1UF, K, 16V	
C572	ECJ2VB1H563K	C 0.056UF, K, 50V	
C573	ECJ2VB1H563K	C 0.056UF, K, 50V	
C580	ECJ2VF1H103Z	C 0.01UF, Z, 50V	
C581	ECA1CM471B	E 470UF, 16V	
C583	ECJ2VC1H120J	E 12PF, J, 50V	
C585	ECA1HM4R7B	E 4.7UF, 50V	
C586	ECA1HM470B	E 47UF, 50V	
C613	ECA1CHG101	E 100UF, 16V	
C614	ECJ2VF1H103Z	C 0.01UF, Z, 50V	
C625	ECJ2VF1H104Z	C 0.1UF, Z, 50V	
C626	ECJ2VF1H104Z	C 0.1UF, Z, 50V	
C627	ECJ2VF1H104Z	C 0.1UF, Z, 50V	
C630	ECJ2VC1H090C	C 9PF, C, 50V	
C637	ECA1HM010B	E 1UF, 50V	
C638	ECJ2VF1H103Z	C 0.01UF, Z, 50V	
C639	ECA1CM100B	E 10UF, 16V	
C640	ECEA1HN010U	E 1UF, 50V	
C641	ECUX1H151JCK	C 150PF, J, 50V	
C645	ECJ2VF1H103Z	C 0.01UF, Z, 50V	
C646	ECJ2VF1H104Z	C 0.1UF, Z, 50V	
C647	ECJ2VF1H104Z	C 0.1UF, Z, 50V	
C648	ECA1HMR47B	E 0.47UF, 50V	
C649	ECJ2VC1H102J	C 1000PF, J, 50V	
C650	ECJ2VB1H103K	C 0.01UF, K, 50V	
C651	ECJ2VF1H103Z	C 0.01UF, Z, 50V	
C653	ECEA1HKN010	E 1UF, 50V	
C661	ECEA1HKNR22	E 0.22UF, 50V	
C662	ECQV1H105JM	P 1UF, J, 50V	
C663	ECJ2VF1H103Z	C 0.01UF, Z, 50V	
C664	ECA1CM471B	E 470UF, 16V	
C665	ECJ2FB1C394K	C 0.39UF, K, 16V	
C701	ECQV1H684JM	P 0.68UF, J, 50V	
C702	ECQE1685KN	P 6.8UF, K, 100V	
C703	ECWF2364JBB	P 0.36UF, J, 250V	
C704	ECWF2394JBB	P 0.39UF, J, 250V	
C705	ECWF2684JBB	P 0.68UF, J, 250V	
C708	ECQE2824KF	P 0.82UF, K, 250V	
C709	ECQM4822JZ	P 8200PF, J, 400V	
C710	ECKR2H101KB5	C 100PF, K, 500V	
C711	ECQB1H392JF	P 3900PF, J, 50V	
C712	ECQB1H272JF	P 2700PF, J, 50V	
C713	ECQB1H333JF	P 0.033UF, J, 50V	
C714	F5Y5P4B222K	C 2200PF, K, 50V	
C715	ECA1VM470B	E 47UF, 35V	
C716	ECKR1H181KB5	C 180PF, K, 50V	
C750	ECA1HM100B	E 10UF, 50V	
C751	ECQB1H393JF	P 0.039UF, J, 50V	
C1153	ECUX1H330JCK	C 33PF, J, 50V	
C1160	ECJ2VC1H181J	C 180PF, J, 50V	
C1161	ECJ2VC1H221J	C 220PF, J, 50V	
C1162	ECUX1H330JCK	C 33PF, J, 50V	
C1170	ECUX1H101JCK	C 100PF, J, 50V	
C1171	ECUX1H101JCK	C 100PF, J, 50V	
C1172	ECJ2VF1H103Z	C 0.01UF, Z, 50V	
C1173	ECA1HM100B	E 10UF, 50V	
C1180	ECJ2VF1H103Z	C 0.01UF, Z, 50V	
C1191	ECJ1VF1H103Z	C 0.01UF, Z, 50V	
C2001	ECJ2VF1C104Z	C 0.1UF, Z, 16V	

Ref. No.	Part No.	Part Name & Description	Remarks
C2002	ECA1HM101B	E 100UF, 50V	
C2003	ECJ2VF1C104Z	C 0.1UF, Z, 16V	
C2004	ECJ2VF1C104Z	C 0.1UF, Z, 16V	
C2005	ECJ2VF1C104Z	C 0.1UF, Z, 16V	
C2006	ECJ2VF1C104Z	C 0.1UF, Z, 16V	
C2007	ECJ2VB1H332K	C 3300PF, K, 50V	
C2008	ECJ2VB1H332K	C 3300PF, K, 50V	
C2205	ECJ2VB1H153K	C 0.015UF, K, 50V	
C2206	ECJ2VB1C224K	C 0.22UF, K, 16V	
C2207	ECA1CM470B	E 47UF, 16V	
C2211	ECJ2VC1H471J	C 470PF, J, 50V	
C2212	ECJ2VB1C333K	C 0.033UF, K, 16V	
C2220	ECJ2VB1H562K	C 5600PF, K, 50V	
C2223	ECJ2VB1H562K	C 5600PF, K, 50V	
C2230	ECJ2VB1C333K	C 0.033UF, K, 16V	
C2231	ECJ2VC1H471J	C 470PF, J, 50V	
C2232	ECJ2VB1H153K	C 0.015UF, K, 50V	
C2330	ECA1CM101B	E 100UF, 16V	
C2801	ECA1HM010B	E 1UF, 50V	
C2802	ECJ2VF1H224Z	C 0.22UF, Z, 50V	
C2803	ECJ2VF1H103Z	C 0.01UF, Z, 50V	
C2804	ECJ2VB1C104K	C 0.1UF, K, 16V	
C2806	ECEA1HN3R3U	E 3.3UF, 50V	
C2807	ECEA1HN3R3U	E 3.3UF, 50V	
C2808	ECJ2VC1H222J	C 2200PF, J, 50V	
C2810	ECJ2VF1H104Z	C 0.1UF, Z, 50V	
C2811	ECA1HM010B	E 1UF, 50V	
C2812	ECJ2VF1H224Z	C 0.22UF, Z, 50V	
C2818	ECJ2VC1H222J	C 2200PF, J, 50V	
C2831	ECJ2VF1H103Z	C 0.01UF, Z, 50V	
C3001	ECA1CM101B	E 100UF, 16V	
C3005	ECA1HMR47B	E 0.47UF, 50V	
C3006	ECA1HM100B	E 10UF, 50V	
C3007	ECA1HM100B	E 10UF, 50V	
C3008	ECA1HMR47B	E 0.47UF, 50V	
C3011	ECJ1VF1H103Z	C 0.01UF, Z, 50V	
C3012	ECEA1HKA47	E 0.47UF, 50V	
C3014	ECA1HMR47B	E 0.47UF, 50V	
C3015	ECA1HM010B	E 1UF, 50V	
C3016	ECA1CM471B	E 470UF, 16V	
C3017	ECJ1VF1H103Z	C 0.01UF, Z, 50V	
C3018	ECA1HMR47B	E 0.47UF, 50V	
C3020	ECA1HM100B	E 10UF, 50V	
C3021	ECA1HM100B	E 10UF, 50V	
C3022	ECA1HM100B	E 10UF, 50V	
C3023	ECA1HMR47B	E 0.47UF, 50V	
C3024	ECA1HM010B	E 1UF, 50V	
C3025	ECA1HMR47B	E 4.7UF, 50V	
C3026	ECA1HMR47B	E 4.7UF, 50V	
C3030	ECJ1VF1H104Z	C 0.1UF, Z, 50V	
C3031	ECA1CM470B	E 47UF, 16V	
C3048	ECEA1CKN100	E 10UF, 16V	
C3053	ECJ1VB1C104K	C 0.1UF, K, 16V	
C3061	ECA1CM470B	E 47UF, 16V	
C3074	ECA1VM470B	E 47UF, 35V	
C3075	ECA1VM470B	E 47UF, 35V	
C3080	ECJ1VC1H681K	C 680PF, K, 50V	
C3081	ECJ1VC1H681K	C 680PF, K, 50V	
C3082	ECJ1VC1H681K	C 680PF, K, 50V	
C3083	ECJ1VC1H681K	C 680PF, K, 50V	
L816	EXCELD25V	CORE	
L817	EXCELD25V	CORE	
L820	EXCELSA39E	BEAD CHOKE	
L821	EXCELD25V	CORE	
L822	EXCELSA39V	BEAD CORE	
L850	EXCELSA35B	BEAD CORE	
L851	EXCELSA35B	BEAD CORE	
L852	EXCELD25V	CORE	
L855	EXCELSA35T	BEAD CORE	
L864	TALL08T470KA	INDUCTION COIL	
L880	T8RHB-H820K	COIL	
L951	EXCELSA24T	BEAD CORE	
L953	EXCELSA24T	BEAD CORE	
L954	EXCELSA24T	BEAD CORE	

Ref. No.	Part No.	Part Name & Description	Remarks
L955	EXCELSA24T	BEAD CORE	
L1120	EXCELSA35T	BEAD CORE	
L1130	EXCELSA35T	BEAD CORE	
L1131	TSKA064-1	BEAD CORE	
L1145	TLUABTA100	PEAKING COIL	
L1160	TLUABTA4R7	PEAKING COIL	
L2830	EXCELSA35T	BEAD CORE	
L2831	EXCELSA35T	BEAD CORE	
L3104	TSK1032	BEAD CORE	
L3105	TSK1032	BEAD CORE	
L4802	EXCELD35V	CORE	
		(S'PORE ONLY)	
L4803	TLTACT100J	PEAKING COIL	
		(S'PORE ONLY)	
L4804	TALL08T102JA	INDUCTION COIL	
		(S'PORE ONLY)	
L4810	EXCELD35V	CORE	
		(S'PORE ONLY)	
L5513	TLTACT180J	PEAKING COIL	
LC4801	MIU-212	GEOMAGNETIC SENSOR	
		(S'PORE ONLY)	
	TRANSFORMERS		
T501	ZTFN35001A	FLYBACK TRANS	s
T551	ETH19Y70AY	H DRIVE TRANS	s
T801	HTS35AA5F6NC	SWITCHING TRANS	s
	DIODES		
D110	MTZJ16A	ZENER DIODE	
D111	MTZJ16A	ZENER DIODE	
D120	MA858	DIODE	
D170	MTZJ5.6B	ZENER DIODE	
D354	MA165	DIODE	
D355	MA165	DIODE	
D356	MA165	DIODE	
D357	MTZJ15B	ZENER DIODE	
D359	MTZJ15B	ZENER DIODE	
D360	ERA22-04	DIODE	
D361	ERA22-04	DIODE	
D362	ERA22-04	DIODE	
D363	MA165	DIODE	
D365	MTZJ10C	ZENER DIODE	
D375	MA165	DIODE	
D466	MTZJ39E	ZENER DIODE	
D467	ERA15-01	DIODE	
D468	MTZJ39E	ZENER DIODE	
D469	MTZJ39E	ZENER DIODE	
D470	MA29W-B	DIODE	
D471	MA29W-B	DIODE	
D511	MA152KTX	DIODE	
D512	MA182	DIODE	
D513	AU02	DIODE	
D515	TVSEU2	DIODE	
D517	MTZJ12B	ZENER DIODE	
D530	MA4104J	DIODE	
D531	MA171	DIODE	
D551	MA4100H	DIODE	
D552	RH3FLFS1	DIODE	
D553	RU3ANLFA10	DIODE	
IC885	AN78L05	LINEAR IC	
IC1051	GPLU252Q	REMOCON RECEIVER	
IC1101	MN1873287TD	MOS IC	
IC1102	TVR4GAS099	IC (EEPROM)	
		(S'PORE ONLY)	
IC1102	TVR4GAS100	IC (EEPROM)	
		(M'EAST ONLY)	
IC1103	S-80741AL-Z	LINEAR IC	
IC2201	TDA9859H/V2	IC	
IC2801	TDA2616/N1	IC	
IC3001	M52791FP	LINEAR IC	
IC4801	PUB4301	TRANSISTOR ARRAY	
IC4802	AN6564NS	LINEAR IC	
IC4803	PUB4301	TRANSISTOR ARRAY	
		(S'PORE ONLY)	
IC4804	AN6564	LINEAR IC	
		(S'PORE ONLY)	

Ref. No.	Part No.	Part Name & Description	Remarks
IC4805	TC4066BFN	IC	
		(S'PORE ONLY)	
IC4861	AN6562	LINEAR IC	
		(S'PORE ONLY)	
	TRANSISTORS		
Q115	2SC2480TX	TRANSISTOR	
Q116	2SC2412KT	TRANSISTOR	
Q160	2SC2412KT	TRANSISTOR	
Q180	2SC2412KT	TRANSISTOR	
Q181	2SC2412KT	TRANSISTOR	
Q182	2SC2412KT	TRANSISTOR	
Q201	2SC2412KT	TRANSISTOR	
Q202	2SC2412KT	TRANSISTOR	
Q203	2SC2412KT	TRANSISTOR	
Q204	2SC2412KT	TRANSISTOR	
Q369	2SA564AQR	TRANSISTOR	
Q420	2SC2412KT	TRANSISTOR	
Q501	2SA1037AKT	TRANSISTOR	
Q502	2SC2412KT	TRANSISTOR	
Q541	2SC4212H	TRANSISTOR	
Q551	2SD2553	TRANSISTOR	
Q570	2SC2412KT	TRANSISTOR	
Q585	2SA1037AKT	TRANSISTOR	
Q640	2SC2412KT	TRANSISTOR	
Q650	2SC2412KT	TRANSISTOR	
Q660	2SC2412KT	TRANSISTOR	
Q701	2SK2538000	TRANSISTOR	
Q702	2SC945AQR-T	TRANSISTOR	
Q750	2SA1018Q	TRANSISTOR	
Q801	2SK1006RF122	TRANSISTOR	
Q860	2SC2412KT	TRANSISTOR	
Q862	2SC1815	TRANSISTOR	
Q863	2SC2412KT	TRANSISTOR	
Q864	2SC2412KT	TRANSISTOR	
Q880	2SC2412KT	TRANSISTOR	
Q881	2SC2412KT	TRANSISTOR	
Q952	2SC945AQR-T	TRANSISTOR	
Q953	2SC1318	TRANSISTOR	
Q954	2SB1030A	TRANSISTOR	
Q955	2SB1569A	TRANSISTOR	
Q956	2SD2400A	TRANSISTOR	
Q957	2SA564AQR	TRANSISTOR	
Q958	2SC945AQR-T	TRANSISTOR	
Q962	2SC945AQR-T	TRANSISTOR	
Q1051	2SC2412KT	TRANSISTOR	
Q1161	2SC2412KT	TRANSISTOR	
Q2110	2SA1037AKT	TRANSISTOR	
Q2111	2SA1037AKT	TRANSISTOR	
Q2330	2SA1037AKT	TRANSISTOR	
Q2801	2SC2412KT	TRANSISTOR	
Q3025	2SC2412KT	TRANSISTOR	
Q3026	2SC2412KT	TRANSISTOR	
Q3041	2SC2412KT	TRANSISTOR	
Q3050	2SC2412KT	TRANSISTOR	
X202	EFCS4R5MS5	FILTER	
X630	TSS816TN1	CRYSTAL OSCILLATOR	
X1130	EF0RC1205B4	CERAMIC RESONATOR	
R126	ERJ6GEYJ122	M 1.2KOHM, J, 1/10W	
R127	ERJ6GEYJ103	M 10KOHM, J, 1/10W	
R128	ERJ6GEYJ103	M 10KOHM, J, 1/10W	
R160	ERJ3GEYJ332	M 3.3KOHM, J, 1/16W	
R161	ERJ6GEYJ331	M 330OHM, J, 1/10W	
R162	ERJ6GEYJ331	M 330OHM, J, 1/10W	
R164	ERJ6GEYJ333	M 33KOHM, J, 1/10W	
R166	ERJ6GEYJ153	M 15KOHM, J, 1/10W	
R180	ERJ6GEYJ103	M 10KOHM, J, 1/10W	
R181	ERJ6GEYJ331	M 330OHM, J, 1/10W	
R182	ERD25VJ331	C 330OHM, J, 1/4W	
R183	ERJ6GEYJ823	M 82KOHM, J, 1/10W	
R184	ERJ6GEYJ103	M 10KOHM, J, 1/10W	
R185	ERJ6GEYJ221	M 220OHM, J, 1/10W	
R186	ERJ6GEYJ683	M 68KOHM, J, 1/10W	
R187	ERJ6GEYJ822	M 8.2KOHM, J, 1/10W	
R189	ERJ6GEYJ103	M 10KOHM, J, 1/10W	

Ref. No.	Part No.	Part Name & Description	Remarks
R202	ERJ6GEYJ471	M 4700HM, J, 1/10W	
R204	ERJ6GEYD000	M 00HM, J, 1/10W	
R205	ERJ6GEYJ331	M 3300HM, J, 1/10W	
R206	ERJ6GEYJ562	M 5.6KOHM, J, 1/10W	
R207	ERJ6GEYJ331	M 3300HM, J, 1/10W	
R208	ERJ6GEYJ221	M 2200HM, J, 1/10W	
R209	ERJ6GEYJ471	M 4700HM, J, 1/10W	
R210	ERJ6GEYJ563	M 56KOHM, J, 1/10W	
R211	ERJ6GEYJ273	M 27KOHM, J, 1/10W	
R213	ERJ6GEYJ471	M 4700HM, J, 1/10W	
R214	ERJ6GEYJ473	M 47KOHM, J, 1/10W	
R215	ERJ6GEYJ103	M 10KOHM, J, 1/10W	
R216	ERJ6GEYJ103	M 10KOHM, J, 1/10W	
R217	ERJ6GEYJ103	M 10KOHM, J, 1/10W	
R218	ERJ6GEYJ332	M 3.3KOHM, J, 1/10W	
R351	TR0S2THF1001	M 1KOHM, F, 1/4W	
R352	TR0S2THF1001	M 1KOHM, F, 1/4W	
R353	TR0S2THF1001	M 1KOHM, F, 1/4W	
R354	TR0S2THF1501	M 1.5KOHM, F, 1/4W	
R355	TR0S2THF1501	M 1.5KOHM, F, 1/4W	
R356	TR0S2THF1501	M 1.5KOHM, F, 1/4W	
R357	TR0S2THF1001	M 1KOHM, F, 1/4W	
R358	ERG12DJ124	M 120KOHM, J, 1/2W	
R359	ERG12DJ124	M 120KOHM, J, 1/2W	
R360	ERG12DJ124	M 120KOHM, J, 1/2W	
R361	ER0S2CHF8451	RESISTOR	
R362	ER0S2CKF1541	M1.54KOHM, F, 1/4W	
R363	ERC12GK222	S 2.2KOHM, K, 1/2W	
R364	ERC12GK222	S 2.2KOHM, K, 1/2W	
R365	ERC12GK222	S 2.2KOHM, K, 1/2W	
R367	ERDS1TJ104	C 100KOHM, J, 1/2W	
R368	ERDS2TJ123	C 12KOHM, J, 1/4W	
R369	ERDS2TJ103	C 10KOHM, J, 1/4W	
R371	TR0S2THF1001	M 1KOHM, F, 1/4W	
R372	TR0S2THF1001	M 1KOHM, F, 1/4W	
R374	ERQ12AJ181P	F 1800HM, J, 1/2W	
R403	ERJ6ENF5601	M 5.6KOHM, 1/10W	
R404	ERJ6GEYJ102	M 1KOHM, J, 1/10W	
R405	ERJ6GEYJ102	M 1KOHM, J, 1/10W	
R420	ERJ6GEYJ223	M 22KOHM, J, 1/10W	
R421	ERJ6GEYJ683	M 68KOHM, J, 1/10W	
R422	ERJ6ENF1503	M 150KOHM, 1/10W	
R423	ERJ6GEYJ122	M 1.2KOHM, J, 1/10W	
R424	ERJ6GEYJ682	M 6.8KOHM, J, 1/10W	
R466	ERJ6GEYJ125	M 1.2MOHM, J, 1/10W	
R470	ERDS1FJ1R0	C 10HM, J, 1/2W	
R471	ERJ6GEYJ684	M 680KOHM, J, 1/10W	
R472	ERJ6GEYJ513	M 51KOHM, J, 1/10W	
R473	ERJ6GEYJ154	M 150KOHM, J, 1/10W	
R474	ERJ6GEYJ753	M 75KOHM, J, 1/10W	
R475	ERDS1FJ1R8	C 1.8OHM, J, 1/2W	
R476	ERDS1FJ1R8	C 1.8OHM, J, 1/2W	
R477	ERG2ANJP121H	M 120OHM, J, 2W	
R709	ERQ2CJP102S	F 1KOHM, J, 2W	
R711	ERDS2TJ101	C 100OHM, J, 1/4W	
R712	ERDS2TJ822	C 8.2KOHM, J, 1/4W	
R714	ERDS2TJ272	C 2.7KOHM, J, 1/4W	
R715	ERDS2TJ222	C 2.2KOHM, J, 1/4W	
R716	ERDS2TJ103	C 10KOHM, J, 1/4W	
R717	ERDS2TJ103	C 10KOHM, J, 1/4W	
R718	ERDS2TJ103	C 10KOHM, J, 1/4W	
R750	ERDS2TJ243	C 24KOHM, J, 1/4W	
R751	ERD25TJ104	C 100KOHM, J, 1/4W	
R752	ERDS2TJ103	C 10KOHM, J, 1/4W	
R753	ERDS2TJ821	C 820OHM, J, 1/4W	
R755	ER0S2CHF1503	M 150KOHM, F, 1/4W	
R756	TR0S2THF1152	M11.5KOHM, F, 1/4W	
R758	TAR26EJ2R7Z	W 2.7OHM, J, 10W	s
R801	TAR26FJ2R2Z	W 2.2OHM, 15W	s
R810	ERDS1TJ394	C 390KOHM, J, 1/2W	
R811	ERDS2TJ473	C 47KOHM, J, 1/4W	
R814	ERF5ZJ121	W 120OHM, J, 5W	
R815	ERG2SJS151H	M 150OHM, J, 2W	
R816	ERG2SJS100E	M 10OHM, J, 2W	

Ref. No.	Part No.	Part Name & Description	Remarks
R817	ERDS1TJ100	C 100HM, J, 1/2W	
R818	ERG5FJ153	M 15KOHM, J, 5W	
R820	ERK12SJR22E	M 0.22OHM, J, 1/2W	
R821	ERK12SJR27E	M 0.27OHM, J, 1/2W	
R822	ERDS1TJ681	C 680OHM, J, 1/2W	
R823	ERDS2TJ332	C 3.3KOHM, J, 1/4W	
R824	ERDS2TJ152	C 1.5KOHM, J, 1/4W	
R830	ERDS2TJ332	C 3.3KOHM, J, 1/4W	
R831	ERDS2TJ102	C 1KOHM, J, 1/4W	
R840	ERD75TAJ825	C 8.2MOHM, J, 3/4W	
R850	ERG3FJ473H	M 47KOHM, J, 3W	
R851	ERQ2CKR33	F 0.33OHM, K, 2W	
R853	ERQ1CKR33	F 0.33OHM, K, 1W	
R854	ERQ1CKR33	F 0.33OHM, K, 1W	
R858	ERX3ANJ4R7	M 4.7OHM, J, 3W	
R859	ERY3ANJ4R7	M 4.7OHM, J, 3W	
R861	ERDS1TJ271	C 270OHM, J, 1/2W	
R862	ERJ6ENF4701	M 4.7KOHM, 1/10W	
R864	ERG3ANJ153	M 15KOHM, J, 3W	
R865	ERDS1TJ102	C 1KOHM, J, 1/2W	
R867	ERJ6GEYJ103	M 10KOHM, J, 1/10W	
R868	ERJ6GEYJ103	M 10KOHM, J, 1/10W	
R869	ERJ6GEYJ472	M 4.7KOHM, J, 1/10W	
R870	ERJ6GEYJ472	M 4.7KOHM, J, 1/10W	
R871	ERJ6GEYJ472	M 4.7KOHM, J, 1/10W	
R882	ERJ6GEYJ223	M 22KOHM, J, 1/10W	
R883	ERJ6GEYJ122	M 1.2KOHM, J, 1/10W	
R884	ERJ6GEYJ103	M 10KOHM, J, 1/10W	
R885	ERJ6GEYJ473	M 47KOHM, J, 1/10W	
R886	ERJ6GEYJ223	M 22KOHM, J, 1/10W	
R952	ERDS2TJ223	C 22KOHM, J, 1/4W	
R953	ERDS2TJ332	C 3.3KOHM, J, 1/4W	
R954	ERDS2TJ331	C 330OHM, J, 1/4W	
R956	ERDS2TJ510	C 51OHM, J, 1/4W	
R958	ERDS2TJ391	C 390OHM, J, 1/4W	
R960	ERQ14AJ100E	F 10OHM, J, 1/4W	
R961	ERQ1CJP331S	F 330OHM, J, 1W	
R962	ERDS2TJ330	C 330HM, J, 1/4W	
R963	ERDS2TJ330	C 330HM, J, 1/4W	
R964	ERQ14AJ471E	F 470OHM, J, 1/4W	
R965	ERDS2TJ223	C 22KOHM, J, 1/4W	
R966	ERDS1FVJ471T	C 470OHM, J, 1/2W	
R967	ERDS2TJ223	C 22KOHM, J, 1/4W	
R968	ERDS2TJ471	C 470OHM, J, 1/4W	
R969	ERDS2TJ390	C 390HM, J, 1/4W	
R970	ERDS2TJ2R7	C 2.7OHM, J, 1/4W	
R971	ERDS2TJ2R7	C 2.7OHM, J, 1/4W	
R972	ERDS2TJ390	C 390HM, J, 1/4W	
R973	ERDS2TJ101	C 100OHM, J, 1/4W	
R975	ERDS2TJ101	C 100OHM, J, 1/4W	
R2224	ERJ6GEYJ331	M 330OHM, J, 1/10W	
R2330	ERJ6GEYJ103	M 10KOHM, J, 1/10W	
R2331	ERJ6GEYJ102	M 1KOHM, J, 1/10W	
R2801	ERJ6GEYJ103	M 10KOHM, J, 1/10W	
R2803	ERDS2TJ8R2	C 8.2OHM, J, 1/4W	
R2804	ERJ6GEYJ472	M 4.7KOHM, J, 1/10W	
R2805	ERJ6GEYJ752	M 7.5KOHM, J, 1/10W	
R2806	ERJ6GEYJ123	M 12KOHM, J, 1/10W	
R2813	ERDS2TJ8R2	C 8.2OHM, J, 1/4W	
R2814	ERJ6GEYJ472	M 4.7KOHM, J, 1/10W	
R2815	ERJ6GEYJ752	M 7.5KOHM, J, 1/10W	
R2830	ERJ6GEYJ471	M 470OHM, J, 1/10W	
R2831	ERJ6GEYJ471	M 470OHM, J, 1/10W	
R3002	ERJ3GEYJ331	M 330OHM, J, 1/16W	
R3003	ERJ3GEYJ101	M 100OHM, J, 1/16W	
R3004	ERJ3GEYJ101	M 100OHM, J, 1/16W	
R3005	ERJ3GEYJ750	M 75OHM, J, 1/16W	
R3006	ERJ3GEYJ184	M 180KOHM, J, 1/16W	
R3007	ERJ3GEYJ184	M 180KOHM, J, 1/16W	
R3008	ERJ3GEYJ750	M 75OHM, J, 1/16W	
R3009	ERJ3GEYJ184	M 180KOHM, J, 1/16W	
R3010	ERJ3GEYJ184	M 180KOHM, J, 1/16W	
R3011	ERJ3GEYJ331	M 330OHM, J, 1/16W	
R3012	ERJ3GEYJ331	M 330OHM, J, 1/16W	



Ref. No.	Part No.	Part Name & Description	Remarks
R3013	ERJ3GEYJ331	M 330OHM,J,1/16W	
R3014	ERJ3GEYJ331	M 330OHM,J,1/16W	
R3015	ERJ3GEYJ750	M 750OHM,J,1/16W	
R3016	ERJ3GEYJ331	M 330OHM,J,1/16W	
R3017	ERJ3GEYJ331	M 330OHM,J,1/16W	
R3019	ERJ3GEYJ104	M 100KOHM,J,1/16W	
R3020	ERJ3GEYJ104	M 100KOHM,J,1/16W	
R3024	ERJ3GEYJ273	M 27KOHM,J,1/16W	
R3025	ERJ3GEYJ102	M 1KOHM,J,1/16W	
R3026	ERJ3GEYJ103	M 10KOHM,J,1/16W	
R3027	ERJ3GEYJ681	M 680OHM,J,1/16W	
R3028	ERJ3GEYJ273	M 27KOHM,J,1/16W	
R3029	ERJ3GEYJ102	M 1KOHM,J,1/16W	
R3030	ERJ3GEYJ221	M 220OHM,J,1/16W	
R3031	ERJ3GEYJ221	M 220OHM,J,1/16W	
R3032	ERJ3GEYJ103	M 10KOHM,J,1/16W	
R3033	ERJ3GEYJ681	M 680OHM,J,1/16W	
R3034	ERJ3GEYJ750	M 750OHM,J,1/16W	
R3035	ERJ3GEYJ750	M 750OHM,J,1/16W	
R3036	ERJ3GEYJ103	M 10KOHM,J,1/16W	
R3041	ERJ3GEYJ750	M 750OHM,J,1/16W	
R3048	ERJ3GEYJ471	M 470OHM,J,1/16W	
R3049	ERJ3GEYJ471	M 470OHM,J,1/16W	
R3050	ERJ3GEYJ221	M 220OHM,J,1/16W	
R3057	ERJ3GEYJ822	M 8.2KOHM,J,1/16W	
R3058	ERJ3GEYJ104	M 100KOHM,J,1/16W	
R3062	ERJ3GEYJ221	M 220OHM,J,1/16W	
R3063	ERJ3GEYJ223	M 22KOHM,J,1/16W	
R3064	ERJ3GEYJ223	M 22KOHM,J,1/16W	
R3065	ERJ3GEYJ222	M 2.2KOHM,J,1/16W	
R3066	ERJ3GEYJ101	M 100OHM,J,1/16W	
R3067	ERJ3GEY0R00	M 0OHM,J,1/16W	
R3069	ERD25FJ101	C 100OHM,J, 1/4W	
R3070	ERJ3GEYJ750	M 750OHM,J,1/16W	
R3071	ERJ3GEYJ750	M 750OHM,J,1/16W	
R3072	ERJ3GEYJ153	M 15KOHM,J,1/16W	
R3073	ERJ3GEYJ153	M 15KOHM,J,1/16W	
R3074	ERJ3GEYJ153	M 15KOHM,J,1/16W	
R3075	ERJ3GEYJ153	M 15KOHM,J,1/16W	
R3076	ERJ3GEYJ750	M 750OHM,J,1/16W	
R3078	ERJ6GEYJ681	M 680OHM,J,1/10W	
R3082	ERJ3GEYJ103	M 10KOHM,J,1/16W	
R3083	ERJ3GEYJ103	M 10KOHM,J,1/16W	
R3084	ERJ3GEYJ102	M 1KOHM,J,1/16W	
R3086	ERJ3GEYJ103	M 10KOHM,J,1/16W	
R3087	ERJ3GEYJ103	M 10KOHM,J,1/16W	
R3089	ERJ6GEYJ681	M 680OHM,J,1/10W	
R4856	ERJ6GEYJ102	M 1KOHM,J,1/10W	
		(S' PORE ONLY)	
R4857	ERJ6GEYJ102	M 1KOHM,J,1/10W	
		(S' PORE ONLY)	
R4860	ERJ6GEYJ822	M 8.2KOHM,J,1/10W	
		(S' PORE ONLY)	
R4861	EVMGSA00B23	VARIABLE RESISTOR	
		(S' PORE ONLY)	
R4862	ERJ6GEYJ822	M 8.2KOHM,J,1/10W	
		(S' PORE ONLY)	
R4863	EVMGSA00B23	VARIABLE RESISTOR	
		(S' PORE ONLY)	
		CAPACITORS	
C101	ECA1CRA220	E 22UF, 16V	
C103	ECQV1H224JM	P 0.22UF, J, 50V	
C110	ECJ2VF1H104Z	C 0.1UF, Z, 50V	
C111	ECA1AM471B	E 470UF, 10V	
C112	ECA1HKA010	E 1UF, 50V	
C113	ECJ2VB1H103J	C 0.01UF, 50V	
C114	ECJ2VF1H103Z	C 0.01UF, Z, 50V	
C115	ECJ2VF1H103Z	C 0.01UF, Z, 50V	
C116	ECJ2VF1H103Z	C 0.01UF, Z, 50V	
C126	ECJ2VF1H103Z	C 0.01UF, Z, 50V	
C128	ECJ2VF1H103Z	C 0.01UF, Z, 50V	
C142	ECJ2VF1H103Z	C 0.01UF, Z, 50V	
C160	ECA1CM101B	E 100UF, 16V	
C161	ECJ2VF1H103Z	C 0.01UF, Z, 50V	

Ref. No.	Part No.	Part Name & Description	Remarks
C162	ECA1CM220B	E 220UF, 16V	
C163	ECA1HM2R2B	E 2.2UF, 50V	
C164	ECJ2VC1H222J	C 2200PF, J, 50V	
C165	ECA1HMR22B	E 0.22UF, 50V	
C166	ECA1HM010B	E 1UF, 50V	
C167	ECJ2VB1H822K	C 8200PF, K, 50V	
C168	ECA1HM100B	E 10UF, 50V	
C169	ECA1HM4R7B	E 4.7UF, 50V	
C170	ECJ2VF1H104Z	C 0.1UF, Z, 50V	
C171	ECA1CM221B	E 220UF, 16V	
C172	ECA1AM471B	E 470UF, 10V	
C180	ECJ2VF1H103Z	C 0.01UF, Z, 50V	
C202	ECUX1H331KEX	C 330PF, K, 50V	
C203	ECJ2VF1H103Z	C 0.01UF, Z, 50V	
C205	ECJ2VF1H103Z	C 0.01UF, Z, 50V	
C206	ECJ2VF1H103Z	C 0.01UF, Z, 50V	
C354	ECCF1H330JC	C 33PF, J, 50V	
C355	ECCF1H330JC	C 33PF, J, 50V	
C356	ECCF1H330JC	C 33PF, J, 50V	
C358	ECCF1H101J	C 100PF, J, 50V	
C359	ECQM4104KZ	P 0.1UF, K, 400V	
C368	ECQV1H224JM	P 0.22UF, J, 50V	
C370	ECKW3D102KBR	C 1000PF, K, 2KV	
C371	ECA1CN100U	E 10UF, 16V	
C373	ECA2EM100B	E 10UF, 250V	
C377	ECA1CM101B	E 100UF, 16V	
C401	ECA1CM100B	E 10UF, 16V	
C402	ECSF1VE474V	T 0.47UF, 35V	
C403	ECJ2VC1H222J	C 2200PF, J, 50V	
C404	ECJ2VC1H102J	C 1000PF, J, 50V	
C420	ECJ2VC1H102J	C 1000PF, J, 50V	
C421	ECJ2VF1H103Z	C 0.01UF, Z, 50V	
C471	L6SL4B121J	C 120PF, J, 500V	
C472	ECQB1104JF	P 0.1UF, J, 100V	
C473	ECQB1H563JF	P 0.056UF, J, 50V	
C474	F4Y5P4B221K	C 220PF, K, 50V	
C475	ECA1VM221B	E 220UF, 35V	
C476	ECA1HM010B	E 1UF, 50V	
C477	ECA1VM332E	E 330UF, 35V	
C478	ECQB1104JF	P 0.1UF, J, 100V	
C479	ECQB1224JF	P 0.22UF, J, 100V	
C501	ECJ2VF1H104Z	C 0.1UF, Z, 50V	
C509	ECA1HM0R1B	E 0.1UF, 50V	
C752	ECA1HM100B	E 10UF, 50V	
C753	ECKR1H101KB5	C 100PF, K, 50V	
C801	ECQU2A224BN9	P 0.22UF, 250V	s
C802	ECQU2A224BN9	P 0.22UF, 250V	
C806	ECKWAB472ZED	C 4700PF, Z, 500V	s
C807	ECKWAB472ZED	C 4700PF, Z, 500V	s
C808	ECKWAB472ZED	C 4700PF, Z, 500V	s
C809	ECKWAB472ZED	C 4700PF, Z, 500V	s
C810	TACFL2G561MA	C 560UF, M, 400V	
C811	ECKR3D222KBP	C 2200PF, K, 2KV	s
C814	ECQE2A473JF	P 0.047UF, J, 250V	
C815	EEUMG2C100B	E 10UF, 160V	
C816	EEUFCLH330B	E 33UF, 50V	
C820	ECKW3D102KBP	C 1000PF, K, 2KV	s
C821	ECKW3D561KBP	C 560PF, K, 2KV	
C825	ECKR1H471KB5	C 470PF, K, 50V	
C826	ECQB1H121JF	P 120PF, J, 50V	
C840	ECKCNA101MB7	C 100PF, M,	s
C841	ECKCNA152ME7	C 1500PF, M,	s
C842	ECKCNA152ME7	C 1500PF, M,	s
C844	ECKCNA222ME7	C 2200PF, M,	s
C845	ECKCNA222ME7	C 2200PF, M,	s
C846	ECKCNA222ME7	C 2200PF, M,	s
C850	ECKR3D122KBP	C 1200PF, K, 2KV	
C851	ECKR2H221KB5	C 220PF, K, 500V	s
C853	ECKR2H331KB5	C 330PF, K, 500V	s
C854	ECKR3D101KBP	C 100PF, K, 2KV	
C855	ECOS2CA271BB	E 270UF, 160V	
C856	EEUFCLV471B	E 470UF, 35V	
C858	ECA1EM102B	E 1000UF, 25V	
C859	ECKR2H331KB5	C 330PF, K, 500V	s

Ref. No.	Part No.	Part Name & Description	Remarks
C860	ECUX1H104KBX	C 0.1UF, K, 50V	
C862	ECA1EM102B	E 1000UF, 25V	
C865	ECQB1H104JF	P 0.1UF, 50V	
C866	ECA1CHG222	E 2200UF, 16V	
C879	ECA1AM470B	E 47UF, 10V	
C884	ECA1CM101B	E 100UF, 16V	
C886	ECA1CM101B	E 100UF, 16V	
C887	ECA1CM101B	E 100UF, 16V	
C888	ECA1CM101B	E 100UF, 16V	
C904	ECKF1H103ZF	C 0.01UF, Z, 50V	
C952	ECA1HHG100	E 10UF, 50V	
C953	ECKF1H103ZF	C 0.01UF, Z, 50V	
C958	ECA2CM470B	E 47UF, 160V	
C959	ECKW2H103ZF7	C 0.01UF, Z, 500V	
C960	ECCR2H151J	C 150PF, J, 500V	
C961	ECA2AM100B	E 10UF, 100V	
C962	ECKW2H103ZF7	C 0.01UF, Z, 500V	
C963	ECCF1H151J	C 150PF, J, 50V	
C964	ECA1CHG101	E 100UF, 16V	
C966	ECA1CHG101	E 100UF, 16V	
C967	ECA1CM221B	E 220UF, 16V	
C971	ECKF1H103ZF	C 0.01UF, Z, 50V	
C1051	ECUX1H101JCK	C 100PF, J, 50V	
C1052	ECJ2VF1H103Z	C 0.01UF, Z, 50V	
C1053	ECA1CM221B	E 220UF, 16V	
C1111	ECA1HM4R7B	E 4.7UF, 50V	
C1112	ECA1HM4R7B	E 4.7UF, 50V	
C1120	ECJ2VF1H103Z	C 0.01UF, Z, 50V	
C1121	ECJ2VF1H103Z	C 0.01UF, Z, 50V	
C1122	ECJ2VC1B471J	C 470PF, J, 50V	
C1123	ECJ2VF1H103Z	C 0.01UF, Z, 50V	
C1140	ECA1CM471B	E 470UF, 16V	
C1141	ECJ2VF1H103Z	C 0.01UF, Z, 50V	
C1145	ECJ2VF1H103Z	C 0.01UF, Z, 50V	
C1146	ECJ2VF1H103Z	C 0.01UF, Z, 50V	
C1147	ECA1CM220B	E 220UF, 16V	
C1148	ECJ2VF1H103Z	C 0.01UF, Z, 50V	
C1150	ECUX1H151JCK	C 150PF, J, 50V	
C1151	ECUX1H151JCK	C 150PF, J, 50V	
C1152	ECUX1H151JCK	C 150PF, J, 50V	
C3084	ECJ1VB0J824K	C 0.82UF, K, 6.3V	
C3085	ECEA1HKN010	E 1UF, 50V	
C3094	ECJ1VC1H102J	C 1000PF, J, 50V	
C3095	ECJ1VC1H102J	C 1000PF, J, 50V	
C3103	ECUX1H331KKBX	C 330PF, K, 50V	
C3104	ECUX1H331KKBX	C 330PF, K, 50V	
C4801	ECA1HM4R7B	E 4.7UF, 50V	
C4803	ECQV1H334JM	P 0.33UF, J, 50V	
C4804	ECQV1H334JM	P 0.33UF, J, 50V	
C4805	ECA1VM470B	E 47UF, 35V	
C4806	ECA1HM4R7B	E 4.7UF, 50V	
C4808	ECA1HM330B	E 33UF, 50V	
C4809	ECQV1H334JM	P 0.33UF, J, 50V	
		(S' PORE ONLY)	
C4810	ECA1VM470B	E 47UF, 35V	
		(S' PORE ONLY)	
C4811	ECJ2VB1H103K	C 0.01UF, K, 50V	
		(S' PORE ONLY)	
C4812	ECA1HM100B	E 10UF, 50V	
		(S' PORE ONLY)	
C4813	ECA1CM101B	E 100UF, 16V	
		(S' PORE ONLY)	
C4814	ECA1CM101B	E 100UF, 16V	
		(S' PORE ONLY)	
C4822	ECHU1C103JA5	P 0.01UF, J, 16V	
		(S' PORE ONLY)	
C4823	ECEA1CN100U	E 10UF, 16V	
		(S' PORE ONLY)	
C4824	ECEA1CN100U	E 10UF, 16V	
		(S' PORE ONLY)	
C4825	ERUF1C1560B	E 56UF, 16V	
		(S' PORE ONLY)	
C4826	ECA1HM4R7B	E 4.7UF, 50V	
		(S' PORE ONLY)	

Ref. No.	Part No.	Part Name & Description	Remarks
C4827	ECA1HM4R7B	E 4.7UF, 50V	
		(S' PORE ONLY)	
C4828	ECQV1H334JM	P 0.33UF, J, 50V	
		(S' PORE ONLY)	
		COILS	
L101	EXCELD35V	CORE	
L111	TLTACTR56K	PEAKING COIL	
L140	TALV35VB6R2K	PEAKING COIL	
L160	TLX120KD01	PEAKING COIL	
L161	EQV7EL521Q	COIL	
L180	TALV35VB6R8K	PEAKING COIL	
L181	TALV35VB6R2K	PEAKING COIL	
L182	TALV35VB6R8K	PEAKING COIL	
L183	TALV35VB5R6K	PEAKING COIL	
L352	EXCELSA24T	BEAD CORE	
L501	EXCELSA35T	BEAD CORE	
L511	EXCELSA39V	BEAD CORE	
L512	EXCELSA39V	BEAD CORE	
L515	EXCELSA35T	BEAD CORE	
L551	EXCELD35V	CORE	
L552	EXCELSA39V	BEAD CORE	
L553	EXCELD35V	CORE	
L640	TLTACT470J	PEAKING COIL	
L665	TLTACT100K	PEAKING COIL 10U	
L701	ELIN682KA	PEAKING COIL	
L702	ELC18B801L	CHOKE COIL	
L703	ELC18B801L	CHOKE COIL	
L704	ELIN682KA	PEAKING COIL	
L705	TLH15696T	LINEARITY COIL	
L706	EXCELSA35T	BEAD CORE	
L707	ELC18B472L	CHOKE COIL	
L801	TLF4GD005	LINE FILTER	s
L802	TLF4GD005	LINE FILTER	s
L809	EXCELD35V	CORE	
L810	EXCELD35V	CORE	
L811	EXCELSA35B	BEAD CORE	
L815	EXCELSA39E	BEAD CHOKE	
D580	MTZJ10C	ZENER DIODE	
D582	MA4082H	DIODE	
D583	MA29W-A	DIODE	
D584	MA29W-A	DIODE	
D613	MA3068MTX	DIODE	
D614	MA3068MTX	DIODE	
D615	MA3068MTX	DIODE	
D620	MA152KTX	DIODE	
D645	MTZJ5.6B	ZENER DIODE	
D701	AU02	DIODE	
D702	MA29W-B	DIODE	
D703	MA29W-B	DIODE	
D750	MA165	DIODE	
D751	MA4104J	DIODE	
D752	MA165	DIODE	
D801	ERZV10D621CS	VARIATOR	s
D803	D4SB80	DIODE	
D804	D4DDD1200001	POSISTOR	s
D805	D4DDD1200001	POSISTOR	s
D810	MTZJ6.2C	ZENER DIODE	
D815	ERA15-04	DIODE	
D816	ERA15-01	DIODE	
D817	ERA15-01	DIODE	
D818	MA2240-B	DIODE	
D819	AM01A	DIODE	
D820	MA2082-A	DIODE	
D821	MA2082-A	DIODE	
D822	AK04	DIODE	
D823	ERA15-01	DIODE	
D824	MA167	DIODE	
D831	MA2560	DIODE	
D850	FMGG2CSLF665	DIODE	
D851	FMLG12S	DIODE	
D853	FMLG12S	DIODE	
D854	FMLG12S	DIODE	
D855	AU02A	DIODE	
D856	D1NL20UV70	DIODE	

Ref. No.	Part No.	Part Name & Description	Remarks
D857	MCR22-6RLRP	THYRISTOR	s
D860	TLP721FD4GR	PHOTO COUPLER	s
D861	MTZJ20D	ZENER DIODE	
D862	MTZJ6.2C	ZENER DIODE	
D865	D1NL20UV70	DIODE	
D866	MTZJ20A	ZENER DIODE	
D870	MTZJ5.6C	ZENER DIODE	
D880	MTZJ6.8B	ZENER DIODE	
D1051	LNH201RGRF5	LED	
D1141	MTZJ5.6A	ZENER DIODE	
D1145	MTZJ5.6A	ZENER DIODE	
D1150	MA165	DIODE	
D1151	MA165	DIODE	
D1152	MA165	DIODE	
D1160	MA152KTX	DIODE	
D1170	MTZJ5.6A	ZENER DIODE	
D1171	MTZJ5.6A	ZENER DIODE	
D2330	MA4047M	DIODE	
D2331	MA152KTX	DIODE	
D2332	MA152KTX	DIODE	
D2333	MA152KTX	DIODE	
D4801	MA3056MTX	DIODE	
		(S'PORE ONLY)	
	INTERGRATED CIRCUITS		
IC351	TDA6103Q-N3	LINEAR IC	
IC420	BA225	IC	
IC451	LA7833S	LINEAR IC	
IC601	TB1251CN	IC	
IC701	NJM456SL	LINEAR IC	
IC801	STRF6656LF53	LINEAR IC	
IC860	SE140N	LINEAR IC	
IC881	AN7812LB	LINEAR IC	
IC882	AN7809	LINEAR IC	
IC884	PQ05RD1B	LINEAR IC	
Q3060	2SC2412KT	TRANSISTOR	
Q3061	2SC2412KT	TRANSISTOR	
Q3074	2SC2412KT	TRANSISTOR	
Q3075	2SC2412KT	TRANSISTOR	
Q4802	2SC2412KT	TRANSISTOR	
		(S'PORE ONLY)	
	OTHERS		
A7	TJS3A9890	9P CONNECTOR	
A11	TJSF17335	CONNECTOR	
A16	TJS3A9660	CONNECTOR	
A17	TJS3A9660	CONNECTOR	
A18	TJS3A9640	3P CONNECTOR	
A19	TJS3A9640	3P CONNECTOR	
A20	TJS4G8020	16P CONNECTOR	
A22	TJS4G8020	16P CONNECTOR	
A23	TJS3A9650	4P CONNECTOR	
A24	TJS3A9660	CONNECTOR	
A41	TJS3A9680	7P CONNECTOR	
A50	TJS3A9650	4P CONNECTOR	
F801	XBA2C40TR0	FUSE 250V 4A	s
GML	TJS3A9890	9P CONNECTOR	
GM2	TJS3A9660	CONNECTOR	
H11	TJSF17435	35P CONNECTOR	
JA1	ERJ3GEY0R00	M 00HM,J,1/16W	
JA1	ERJ6GEY0R00	M 00HM,J,1/10W	
JA2	ERJ3GEY0R00	M 00HM,J,1/16W	
JA2	ERJ6GEY0R00	M 00HM,J,1/10W	
JA6	ERJ6GEY0R00	M 00HM,J,1/10W	
JK1	TJB4G647	FRONT AV TERMINAL	
JK351	TJSC01200	CRT SOCKET	s
JK3001	TJB4G644	REAR AV TERMINAL	
JS466	ERJ6GEY0R00	M 00HM,J,1/10W	
JS580	ERJ6GEY0R00	M 00HM,J,1/10W	
JS861	ERJ6GEY0R00	M 00HM,J,1/10W	
JS873	ERJ6GEY0R00	M 00HM,J,1/10W	
JS881	ERJ6GEY0R00	M 00HM,J,1/10W	
JS1104	ERJ6GEY0R00	M 00HM,J,1/10W	
JS1165	ERJ6GEY0R00	M 00HM,J,1/10W	
JS2301	EXCELSA35T	BEAD CORE	

Ref. No.	Part No.	Part Name & Description	Remarks
JS3093	ERJ3GEY0R00	M 00HM,J,1/16W	
JS3094	ERJ3GEY0R00	M 00HM,J,1/16W	
JS3095	ERJ3GEY0R00	M 00HM,J,1/16W	
JS3096	ERJ3GEY0R00	M 00HM,J,1/16W	
JS3097	ERJ3GEY0R00	M 00HM,J,1/16W	
JS3098	ERJ3GEY0R00	M 00HM,J,1/16W	
JS4801	ERJ6GEY0R00	M 00HM,J,1/10W	
		(M'EAST ONLY)	
JS4816	ERJ6GEY0R00	M 00HM,J,1/10W	
		(M'EAST ONLY)	
L1	TJS3A9680	7P CONNECTOR	
L2	TJS118590	2P CONNECTOR	
L3	TJS3A9680	7P CONNECTOR	
RT1	TJS3A9640	3P CONNECTOR	
RT2	TJS3A9640	3P CONNECTOR	
S801	ESB92DA1B	SWITCH	s
S1180	EVQ11G05R	SWITCH	
S1181	EVQ11G05R	SWITCH	
S1182	EVQ11G05R	SWITCH	
S1183	EVQ11G05R	SWITCH	
S1184	EVQ11G05R	SWITCH	
S1185	EVQ11G05R	SWITCH	
TNR001	ENV59D82G3R	TUNER	s
X20	TJS4G8010	16P CONNECTOR	
X22	TJS4G8010	16P CONNECTOR	
X23	TJS3A9680	7P CONNECTOR	
X101	K7256M	SAW FILTER	
X180	EFCS4R5MW5	CERAMIC FILTER	
X181	EFCS5M7MW3	CERAMIC FILTER	
X182	EFCS6R0MW5	CERAMIC FILTER	
X183	EFCS6R5MW5	CERAMIC FILTER	
X201	EFCS6R5MS5	CERAMIC FILTER	

